

MAY 1954

AMERICAN ARTISAN

Warm Air Heating
Residential Air Conditioning
Sheet Metal Contracting

FEATURES THIS MONTH

- CAREFUL ROUTING (photo) helps dealer use fewer trucks, is part of four point program for keeping truck costs down page 76

- WHAT DO home owners like about air conditioning? Answers to a special Artisan survey can be used by dealers as sales ammunition ... page 62

- HOW TO CHECK and balance warm air heating systems after the installation is completed page 66

- RISER HOOD with a rectangular base and round outlet is made for a tank under a low balcony page 78

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Air Control

PERIMETER DIFFUSERS

the only complete line
specially designed for
perimeter heating and cooling

PAY DIVIDENDS 3 WAYS

A COMPLETE LINE . . . Here is one source for all your perimeter needs. Combine orders for big quantity discounts! One source simplifies ordering, delivery and inventory, gives you an extra profit on every job.

DO A BETTER JOB . . . Get up to 100% more area coverage with Air Control Diff-

fusers. The higher throw and wider spread truly blankets an area, insuring perfect comfort and satisfied customers.

FOR LESS COST . . . You need fewer runs to do a job with Air Control. That means lower bids and more business for you. It pays to standardize on Air Control.

FOR BASEBOARD PERIMETER SYSTEMS (No. 180 Diffuser)

The flexible unit that installs fast, looks best and costs least...that's the No. 180 by Air Control! Install it in minutes on old or new jobs. Just place back section against wall, make stack-head connection and lock front on. Choose either 4' or 2' sections to suit job...or join several units to create a continuous wall of comfort.



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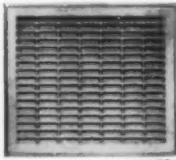
FOR SIDEWALL USE (No. 15 Diffuser)

Blankets up to 14' of wall or window area. The exclusive flared top section and better fin design give you coverage that's unequalled, anywhere! The low resistance factor makes it ideal for either standard trunk or the new high-velocity, small pipe systems.



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These Return Air Grilles are the perfect answer to the problem of centralized returns. They are rugged, low-cost, and good looking, and are available in a wide range of sizes. Easily installed in ceilings, walls, doors—one return in the larger size has enough capacity for a whole system.



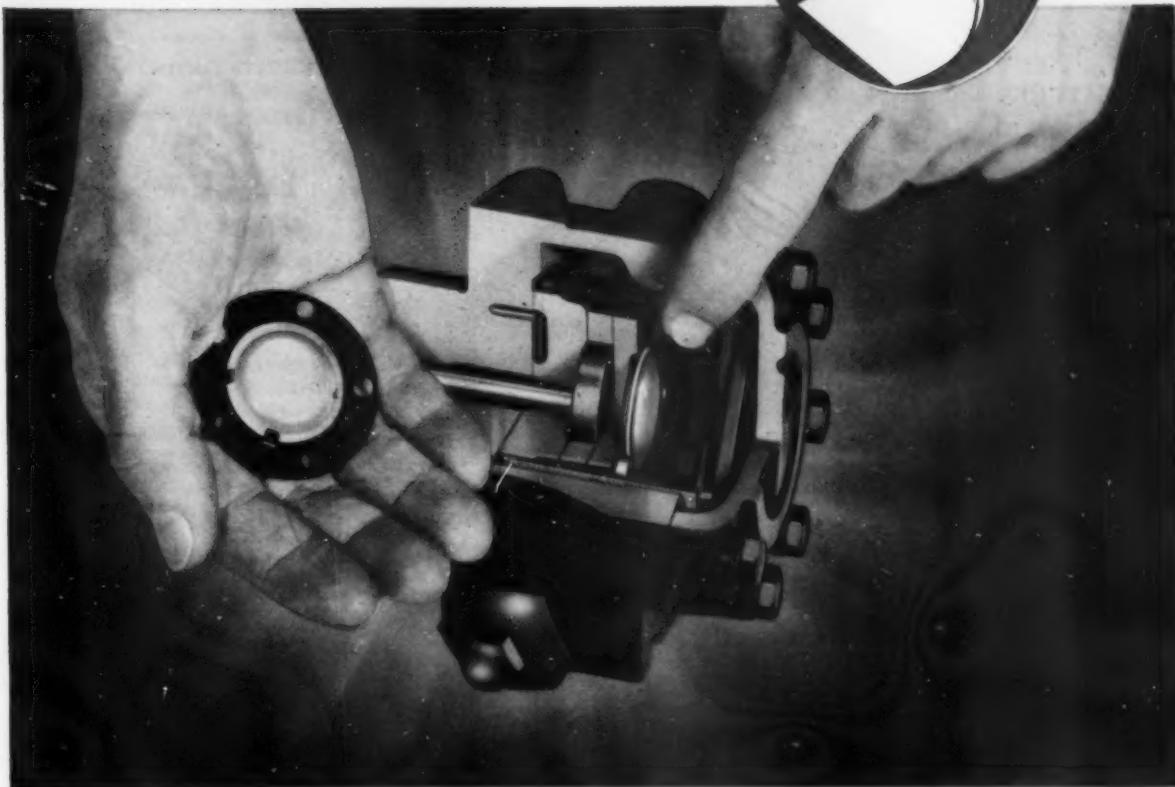
PROVE AIR CONTROL SUPERIORITY FOR YOURSELF

Ask your local Jobber or write for the Air Control catalog and price list. Your own experience will tell you the value of the broad Air Control diffuser line...how it saves you money on every installation.



AIR CONTROL PRODUCTS, INC.
DEPT. A COOPERSVILLE, MICHIGAN

**S-s-s-h! New nylon "pillow"
cushions tank hum . . .**



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or no resistance to oil flow; so there is never any chance of starving the unit. Servicing the new anti-hum device is simpler, too, should it ever be necessary. You remove the cover, take out the strainer . . . there it is right out in the open. To replace, you bend back the ears holding it in place and insert a new one. If unit does not have special adapter, diaphragm can be placed loose in strainer chamber. What could be simpler? Features like this one are why Sundstrand Fuel Units are first with manufacturers, dealers, wholesalers, servicemen, service stations, users.

**See you at the
OHI SHOW
May 16-20
Booth 659-661**

**SUNDSTRAND MACHINE TOOL CO.
Hydraulic Division, Rockford, Illinois**

Made in Canada by John Inglis, Ltd.
14 Strachan Ave., Toronto

SUNDSTRAND

A name to remember in **FUEL UNITS**

AMERICAN ARTISAN

MAY 1954

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Founded 1864

Volume 91 No. 5

WARM AIR HEATING

RESIDENTIAL AIR CONDITIONING

SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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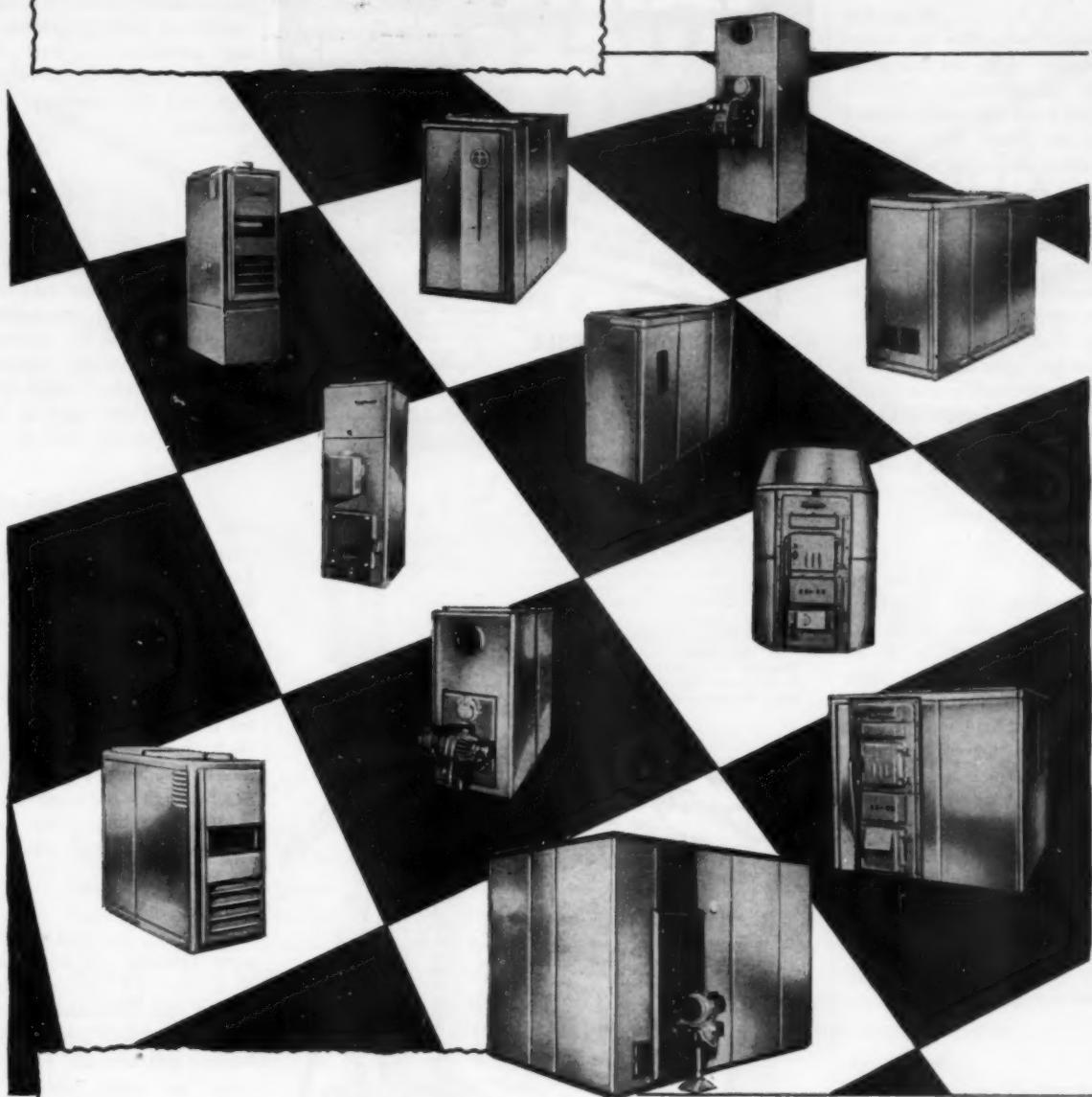
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Your MOVE SIR!



Every Move A Winner!

You may not be a champion at checkers, but when it comes to warm air heating you can have the jump on them all with Syncromatic's complete line of warm air furnaces.

Capacities

From 60,000 to 1,000,000 B.T.U.s.
FOR OIL, GAS OR COAL

WRITE OR CALL

Syncromatic Corporation

WATERTOWN, WIS

the editor's notebook

Thumbing Through This Month's Artisan

. . . we see that people who live in cooled houses — go overboard for air conditioning! This is clear from comments received as the result of a special Artisan-conducted survey covering a cross section of home owners. These comments — such as "It's worth every penny!" and "It's as essential as heating" — can be used as sales ammunition by dealers, especially when specific advantages such as increased cleanliness are cited. *How Home Owners Like Air Conditioning* describes the questions asked and gives the full comments from these satisfied customers.

. . . and we find a *Guide to the 1954 OHI Convention and Exposition* that will help us be in the right places at the right times. There's a complete diagram of the booths — and a complete list of exhibitors (with products and those in attendance) to go along with it. There's also a complete program covering such important events as speeches and dinners. And then there are some sage words of Ben Franklin's which apply (or should apply) to all meetings and conventions.

. . . we also see how one *Versatile Dealer Attracts Customers* — by exhibiting his sheet metal skill in the form of a huge copper Indian posted at the roadside next to his place of business. And we're glad to have a story about Herb Drews in this May issue — because this May marks the 50th year in business for the man everyone in and near Danville, Ill., goes to see "at

AT-A-GLANCE Sentry TANK GAUGES

REMOTE READING
INDOORS • OUTSIDE
UNDERGROUND

**ACCURATE, DEPENDABLE,
WEATHERPROOF GAUGES**
Easy to install... Easy to read!

Unaffected by specific gravity changes or variations, Sentry Remote Gauges accurately indicate liquid level at all times. Simplified mechanical operation eliminates unnecessary fittings, bulbs or levers for serviceman to tamper with as well as his need for access to building. Remote Gauge may also be combined with At-A-Glance Direct Gauge, shown below, for readings at both tank and remote location if desired. Non-corrosive, stainless steel and brass extension lines connect tank float with heavy-duty cast aluminum, weatherproof, thermometer type indicator — calibrated in fractions. Unconditionally guaranteed. Write for descriptive literature.

Type D-O and D-10 Gauge for basement tank installations with 2" and 1½" openings respectively.

Type D-U Gauge for underground tank installations. Fits 2" openings only.

For accurate DIRECT tank readings

Fastest selling, most popular gauge in the industry. Simplified mechanism eliminates gears, cams, springs and trouble. Durably constructed with patented assembly featuring unbreakable, fog-proof, heavy-duty double plastic domes with printed calibration scale between for clear, easy-to-see readability from any direction. Gauge is Underwriters' Listed and will withstand an excess of 70 lbs. air pressure per sq. inch. Entire unit is non-corrosive and guaranteed leakproof under pressure filling and against defective operation, workmanship and materials. Quick, simple to install even on partially filled tanks. Write for complete descriptive literature.

KRUEGER Sentry GAUGES
GREEN BAY • WISCONSIN

the editor's notebook

(continued)

the sign of the Indian." In that time, Mr. Drews has solved some unusual heating, ventilating and air conditioning problems — two of which (having to do with pigs and TV studios) are described.

. . . and we also learn how to deal with a special sheet metal problem — *Making a 90 Deg Riser Hood* with an end exhaust take-off for tanks located under low balconies. Again this month, as he does every month, Hugh Reid offers a special, simplified layout method to solve the pattern problem.

. . . and we find out that if we were to enter a large sheet metal shop in London, we'd be greeted by a uniformed, gold-braided attendant, and (according to one American's-eye view) we'd also find that *British Sheet Metal Work Is Different* from our own. Lawrence Gichner discovers that some British methods are "obsolete," but that the work lasts a long, long time. He describes some typical jobs to show why.

. . . and we get some valuable tips on *How to Control Moisture in Heated and Unheated Crawl Spaces* — which authors S. Konzo and H. T. Gilkey term "an acute problem." They prescribe some preventive medicine — certain types of soil surfaces, moisture barriers, ventilation openings and construction materials that avert conditions which might lead to moisture being transferred to rooms above or wood members changing in size during the year.



ONE SOURCE

A complete line of prefabricated furnace fittings, grilles, humidifiers and rain goods. No need to "shop around" or try to match unrelated material. And Char-Gale systems are engineered for easy assembly and maximum efficiency when installed.

QUICK SERVICE

The Char-Gale truck fleet assures you of fast delivery in flawless condition, right to your door. You can keep your inventory down, yet be sure that your supply of fittings and related material will be there *when you need it.*

BIG SAVINGS

With Char-Gale, you save storage space, and you save time and money in figuring costs. In addition you can get liberal truckload discounts when ordering any combination of the above units. Quotations on request.

For Information and Catalogs, Contact Your Jobber or Write Direct to

CHAR-GALE MANUFACTURING COMPANY

ANOKA, MINNESOTA

the editor's notebook

(continued)

Cooling Sales Ahead of Schedule

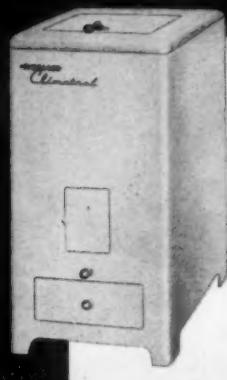
"THE SEASONAL upsurge in the air conditioning market is running 30 days ahead of previous experience," according to J. F. Knoff, vice president in charge of sales, Airtemp Div., Chrysler Corp. At meetings in New York, Atlanta, and Chicago, Mr. Knoff revealed that the company's February orders had increased 55 per cent over January orders, and that February 1954 orders were 20 per cent ahead of the February 1953 volume. "It's unusual for the season to start so early," Mr. Knoff observed, "and it is an indication that retail activity is at a faster pace than it was a year ago."

The Remington Corp. reported that orders booked to March 1 for room air conditioners for 1954 delivery were more than 90 per cent of total sales for the entire previous fiscal year ending October 31, 1953. Sales completed for the first quarter, to February 1, of the company's current fiscal year, were 23 per cent ahead of the same period last year.

ASHVE to Meet in New England

TOPICS scheduled for discussion at the 60th Semi-Annual Meeting of the American Society of Heating and Ventilating Engineers include operating costs of residential cooling, solar radiation, air filtration, relation of room size and panel area, and vertical jets for hot and cold air. Swampscott, Mass., where the meeting is scheduled to be held June 28 to 30, is located on the north shore of Massachusetts, adjacent to some of the country's most famous historic landmarks, including

2
ALL-SEASON
MONEY-MAKERS
FOR YOU
FROM
Mueller Climatrol



1. MUELLER CLIMATROL INCINERATOR

Gas and electric models

Burns anything that will burn. Gas model is low-input, dehydrating type; operates continuously and automatically without smoke or odor. Electric model has timer. Each has big, 1.6-bushel capacity. Shipped assembled; easy to install. Requires no servicing. Handsome, standard grey or deluxe white models. Compact — 18" wide, 36" high, 24" deep.



2. MUELLER CLIMATROL DEHUMIDIFIER

Stops moisture damage in homes and businesses. Gets rid of damp basements, dripping pipes, rust, mold, mildew, musty odor. Many unique, exclusive features. Quiet, efficient, portable. Plugs into any standard electrical outlet. Costs only a few cents a day to operate. Attractively styled — finished in Mountain Spring Green.

D-166A

Write for bulletins that tell you more
about these Mueller Climatrol profit-builders.



Mueller Climatrol

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the editor's notebook

(continued)

Faneuil Hall, Paul Revere house, Old North Church, and Bunker Hill monument.

Sees Bright Outlook for Titanium

ALLEGHENY Ludlum Steel Corp. is participating in the development and production of titanium through a joint ownership of Titanium Metals Corp. of America with the National Lead Co. It is processing ingots produced by Titanium Metals Corp. on its regular rolling and processing facilities. The total national output of titanium doubled in 1953, according to Allegheny Ludlum's 1953 annual report, and the application of titanium to aircraft made important steps forward during the year. Applications to date, the company believes, represent only the early steps to a large scale future.

February Housing Starts Up 10% Over January

HOUSING STARTS rose by more than 10 per cent from the winter low in January to 73,000 in February, according to preliminary estimates of the U. S. Labor Department's Bureau of Labor Statistics. Although February usually marks the beginning of the spring upturn in housing starts, the increase this year was sharper than in most postwar years. The February advance was entirely in privately owned housing and was nationwide, with particularly marked gains in the central regions. Privately owned dwelling unit starts increased by 7100 in February to 71,800, and on a seasonally adjusted basis were at an annual rate of 1,180,000 units, which was exceeded in only four months during the past three years.



*This man
didn't
buy a
Lockformer...

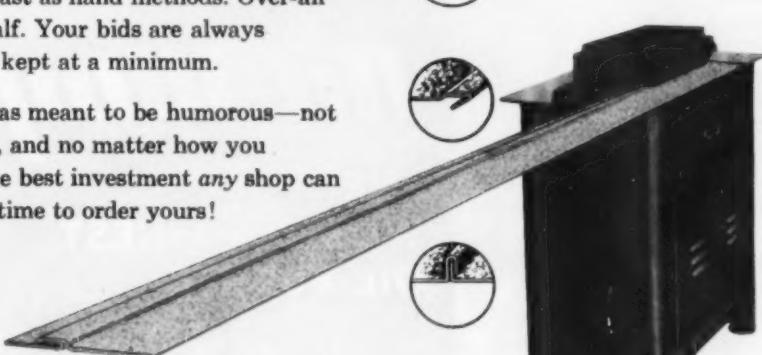
Now, he
doesn't
need one!*

Running a successful shop is simple—at least in theory. Just bid low enough to get all the jobs you need. Then, keep your costs down so that you make a satisfactory profit on the jobs you get.

A Lockformer helps you do both—not in theory, but in actual shop time. For Lockformers make Pittsburghs and other seams fifteen times as fast as hand methods. Over-all fabrication costs are cut in half. Your bids are always competitive, your shop costs kept at a minimum.

Our headline, incidentally, was meant to be humorous—not gloomy. But, all joking aside, and no matter how you look at it, a Lockformer is the best investment *any* shop can make. Right now is the best time to order yours!

*Send for your free copy of
the Lockformer Catalog*



ONE MAN WITH A LOCKFORMER MAKES MORE PITTSBURGH LOCKS THAN SIXTEEN MEN WITH EIGHT BRAKES

THE LOCKFORMER CO.

6015 West Roosevelt Road Chicago 50, Illinois

the editor's notebook

(continued)

Discuss Guaranteed Wage Issue

THE UNITED States Chamber of Commerce is conducting a series of conferences with business management to discuss the guaranteed annual wage issue. Several meetings have already been held and others are scheduled for the near future. According to the Washington Report, published by the National Chamber of Commerce, union advocates of guaranteed annual wages have changed their concept of how they can best be attained. Instead of writing guaranteed pay into wage contracts, the unions are considering plans for obtaining bigger jobless pay either through private supplement by management of unemployment compensation funds or through public programs.

Stoker Sales Are Decreasing

FACTORY SALES of mechanical stokers in 1953 totalled 16,658, according to the Bureau of the Census, Department of Commerce. This is a decrease of 28 per cent from the 23,047 units reported for 1952. Of the 16,658 units sold in 1953, 11,659 were for residential use. Sales of residential stokers for the six years beginning 1948 were:

Year	Bituminous	Anthracite
1948	62,051	9,524
1949	21,756	4,616
1950	13,102	4,191
1951	12,451	4,268
1952	8,572	8,068
1953	6,801	4,858

Copper Production Cut Back

REVERE Copper and Brass, Inc., in a recent letter to stockholders, reviews the metal situation during the past

MAN'S QUEST FOR DEPENDABLE HEAT

Primitive Man cherished fire as it provided him with heat and comfort. But despite his care, accidents sometimes extinguished the flame. Being unable to produce fire, he might be without it for months or even years.

It's no wonder then, that the man who found and brought back fire produced by lightning, or some other natural means, was hailed as a hero and often made chief of the tribe.

Man has come a long way since those early times in insuring his comfort. Yet, even today, dependability of heating equipment is vital.



YOU GET
DEPENDABLE
HEAT WITH

nu-Way

THE WORLD'S FINEST OIL BURNER

Insist on a heating plant
with an oil burner made by Nu-Way.
Write for full details.



THE
nu-Way CORPORATION

ROCK ISLAND, ILLINOIS

Sold through jobbers and distributors

The adopted standard on leading furnaces and boilers

"Automatic Oil Heat Exclusively Since 1921"

the editor's notebook

(continued)

year. The letter points out a strong tendency in the copper mining industry both here and in Chile to cut production to fit the reduced pattern of sales.

"This is a stabilizing factor," the letter states, "tending to bring output in line with demand and give firmness to copper prices. New mines will assure adequate future output."

Likes Artisan Sheet Metal Articles

Methuen, Mass.

I HAVE FOUND American Artisan one of the most useful pieces of mail one could receive, not only in the office but in the shop as well for the shop problems in sheet metal work presented. We have kept a file of copies received since we entered our subscription so that we can refer to them when the occasion arises.

CHESTER A. KNIGHT
Knight Sheet Metal Works

Requests Cooling Reprints

Wichita, Kans.

PLEASE SEND us three of the booklets containing the reprint articles on air conditioning. It seems to us that any person in the air conditioning business would find this manual an excellent source of information.

E. G. JOHNSON
The Coleman Co., Inc.

88 Million Jobs by 1975?

CENSUS experts say that our population in 1975 should be about 200 million or more persons. Our 1975 labor force is expected to be about 88 million, according to the National Association of Man-



**Your biggest opportunity to get
your FULL SHARE of the
tremendous builder and
modernization markets**

It's big news for *every* dealer—this new Thatcher Air Conditioner. Here's a real opportunity to cash in on the big-volume, high-profit, summer cooling market!

Builders are enthusiastic because air conditioning sells houses . . . and with Thatcher they know they can deliver the finest! Homeowners are enthusiastic because a Thatcher gives dependable, cool air enjoyment . . . adds extra dollar value to their homes. And we're enthusiastic because *now* you can make more money with the Thatcher "two season" line by selling efficient and dependable "indoor comfort" equipment . . . year round.

Don't miss the opportunity to cash in on the lusty building and modernization market. Get all the facts about this big profit maker. Write today for full details!

Available in 2, 3, 5, 7½, and 10 ton models for both store and home installations. Same eye pleasing maroon and gray finish as the famous Thatcher heating line.

Thatcher FURNACE COMPANY
GARWOOD, NEW JERSEY

AIR CONDITIONERS • FURNACES • GAS BURNERS • OIL BURNERS • BOILERS

the editor's notebook

(continued)

ufacturers — a third larger than it is today. Thus, jobs necessarily must be created for 22 million new workers, most of them in business and industry. There is a \$12,000 investment behind the average job in America today, which means, says NAM, that we will need about \$264 billion of new investment by 1975 to provide equally productive jobs for our increased work force.

Readers Comment on Artisan Editorial

A NUMBER of the Artisan's readers evidently found the views expressed in our April editorial — *Profit is Essential to Business* — in line with their own thinking, judging from some of the comments we received.

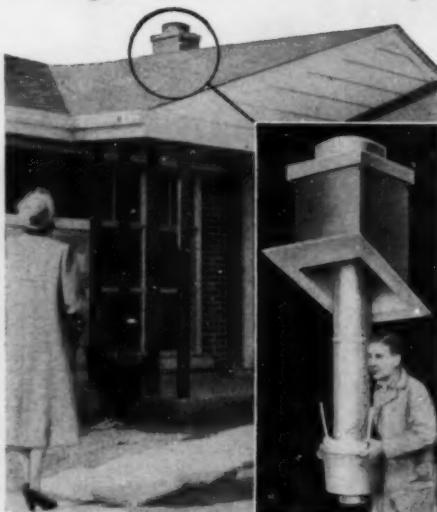
For instance, F. I. Eynatten, a Peoria heating dealer, wrote:

"Your April editorial is very timely. We are today in need of stabilization in all walks of life — local, state and national. Price cutters are already at work, and articles such as this may help to stop them."

A Chicago sheet metal contractor — Louis L. Narowetz — commented as follows: "Your editorial is an excellent one. It seems to me that we are at the bottom of a cycle where the only turn is upwards. I believe the number of new and old jobs together will provide as much business this year as new jobs did last year. You are certainly right when you say, 'Good selling must be based on performance and not on price.'"

Charles H. de Laughter, Oklahoma City, a sheet metal contractor, said: "I think you have given an accurate picture of the situation existing

VITROLINER -the Modern Prefab Chimney



Modern '54 Homes demand the BEST in a prefab chimney! Vitroliner offers the STANDARD OF QUALITY and SPECIAL features that architects and builders demand in a truly modern chimney for 1 and 2 story homes.

- TAILOR MADE at the factory to fit the individual building—no cutting or fitting on the job!
- LIGHTWEIGHT and easy to handle. Requires NO EXTRA structural support.
- WELL DESIGNED to save FLOOR SPACE in the utility room. Can be installed immediately over the heating plant. The chimney can be located in any part of the house.
- MODERN STYLED to harmonize with the smart designs of today's '54 homes. A beautiful effect can be obtained by painting the chimney housing the same color as the roof.
- ENGINEERED for greater efficiency of the heating plant. Gives a better draft than other designs or a comparable masonry chimney. Provides attic ventilation.
- QUALITY BUILT for long life of heavy-gauge steel, coated with acid-resisting porcelain, completely covered with molded insulation.
- LOW COST when you consider total labor and material. Leading builders say, "Vitroliner Chimneys have the LOWEST installed price."
- ACCEPTED by F.H.A. and local building authorities. LISTED by Underwriters Laboratories for all fuels.

Write for circular today

"The Pioneer prefabricated Chimney"

CONDENSATION
ENGINEERING CORPORATION
3511 W. POTOMAC AVE., CHICAGO 51, ILL.

the editor's notebook

(continued)

today, and your advice to dealers and contractors is excellent."

W. A. Kuechenberg, big Chicago sheet metal contractor, said: "Good work! I agree with your views all down the line."

J. M. Martin, of the National Warm Air Heating and Air Conditioning Association, had this to say: "It is my wish that all dealers and contractors will follow your advice."

From Stuart Rambo, secretary, National Heating Wholesalers Association, Inc., came the comment: "Your April editorial certainly contained a lot of good advice for our industry."

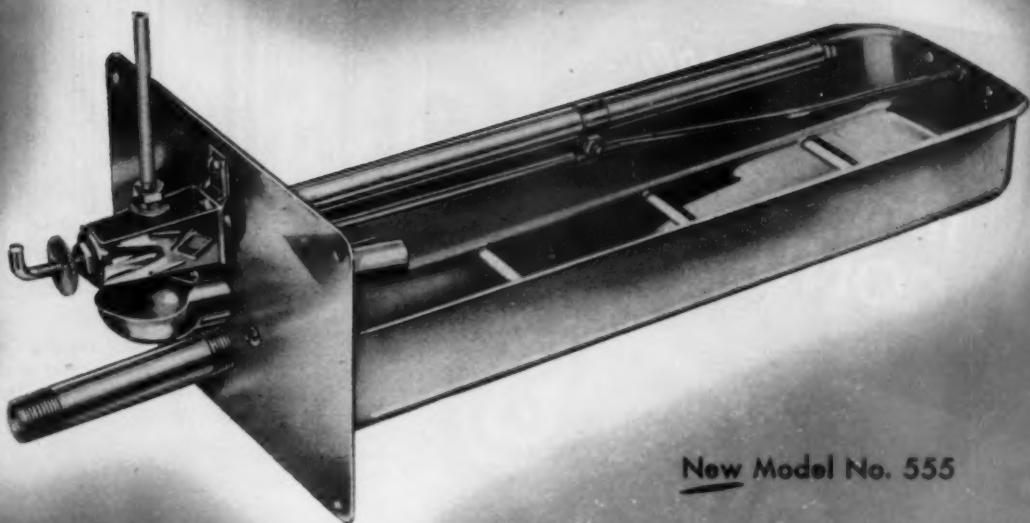
Suggest Vision Tests for Industrial Workers

"WORKMEN who are not aware that they have defective vision may be unintentionally doing poor work and turning out inferior products," was the opinion voiced recently by Dr. Rex H. Wilson, medical director for the B. F. Goodrich Co. Speaking before the Occupational Vision Conference at the University of Maryland, Dr. Wilson said, "Industrial managements have a wonderful opportunity of doing a job of preventive medicine, of improving employee relations and morale through visual surveys."

Dr. Wilson described a visual survey conducted by his company which revealed that a general increase in the need for wearing corrective eye glasses, with increasing age, occurred among all groups tested. In ages above 50, more than 90 per cent required corrective glasses and more than 53 per cent of those taking the examination needed assistance.

Pre-assembled . . .

FOR FASTEST INSTALLATION



New Model No. 555

Vaporite

AUTOMATIC DRIP HUMIDIFIER

Saves you money on every job. Cuts *time* and *labor*. No parts to assemble — no pan leveling or trick mounting.

Cut single plenum opening — slip *completely assembled* Vaporite through hole. Fasten 5 screws. Attach to water

pipe and it's ready to operate. Note: Also available, Model No. 555-C with $\frac{3}{8}$ " O.D. x 12" copper pipe overflow.

Most important of all — it's an *automatic humidifier* with a DRIP FEED that gives you true CONTROLLED

HUMIDITY . . . Thermostat automatically measures the amount of water to go to hot pan.

GET NEW
FREE
LITERATURE

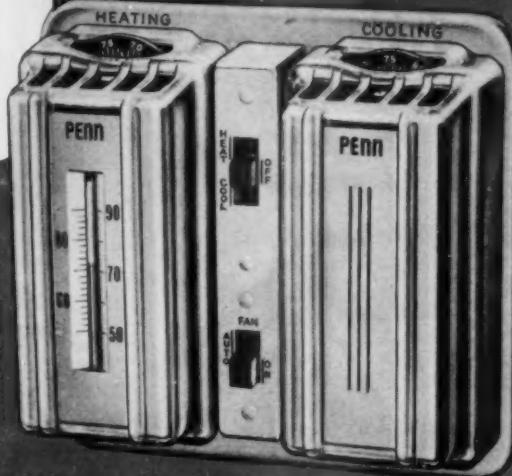
• Here is the most modern, most efficient way to put moist vapors in the home. Nationally advertised in Saturday Evening Post, Better Homes & Gardens, Small Homes Guide.

A-5

AUTOMATIC HUMIDIFIER CO. Cedar Falls, Iowa

Nationally Advertised
in June, 1954, Issues of
BETTER HOMES & GARDENS
AMERICAN HOME
NEWSWEEK

Here they are...
time-tested
CONTROLS



Type AC10 heating and cooling thermostat featuring heat anticipation and cold anticipation to assure closer temperature and humidity control.

for year 'round packaged Air Conditioning

Central residential air conditioning is the *new boom market for you!* Everybody is rushing to get "into the act." BUT, you don't have to experiment IF you sell and install Penn-controlled packaged air conditioning. Here's why . . .

Automatic control of heating and cooling is *not new* to Penn. For many years, Penn has been developing and building automatic controls for the leading manufacturers of heating and mechanical cooling equipment. These controls have proven themselves in thousands and thousands of instal-

lations . . . their accuracy and dependability *on the job* are *time-tested*. That's why manufacturers of packaged air-conditioning equipment bring their control problems to Penn for solution!

You, too, can get the right start in the new, profitable, residential heating and cooling market. Be sure the packaged air conditioning you sell and install is fully equipped with Penn Controls. **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto.

PENN
AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

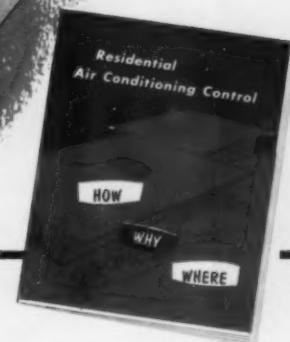
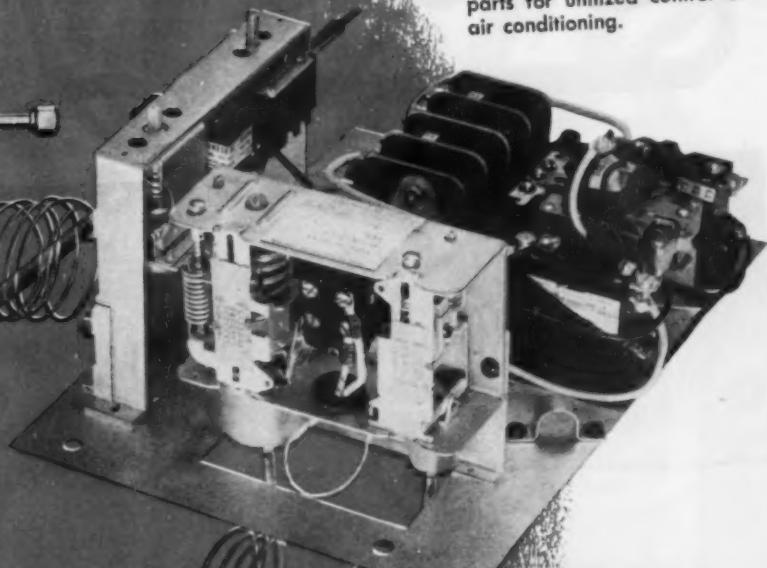
Type 271 AP12AP with lockout on both high and low pressure is specifically designed for hermetic units in packaged air conditioning.



Series 246 two-piece water valve developed for city water-cooled hermetic compressors.



Typical control panel consisting of necessary component parts for unitized control of air conditioning.



CLIP AND MAIL

Here's Penn's new, specially-prepared manual on residential air-conditioning control. It's loaded with practical installation data. Reserve your FREE COPY now. Mail coupon to Penn Controls, Inc., Goshen, Indiana.

Firm _____

Address _____

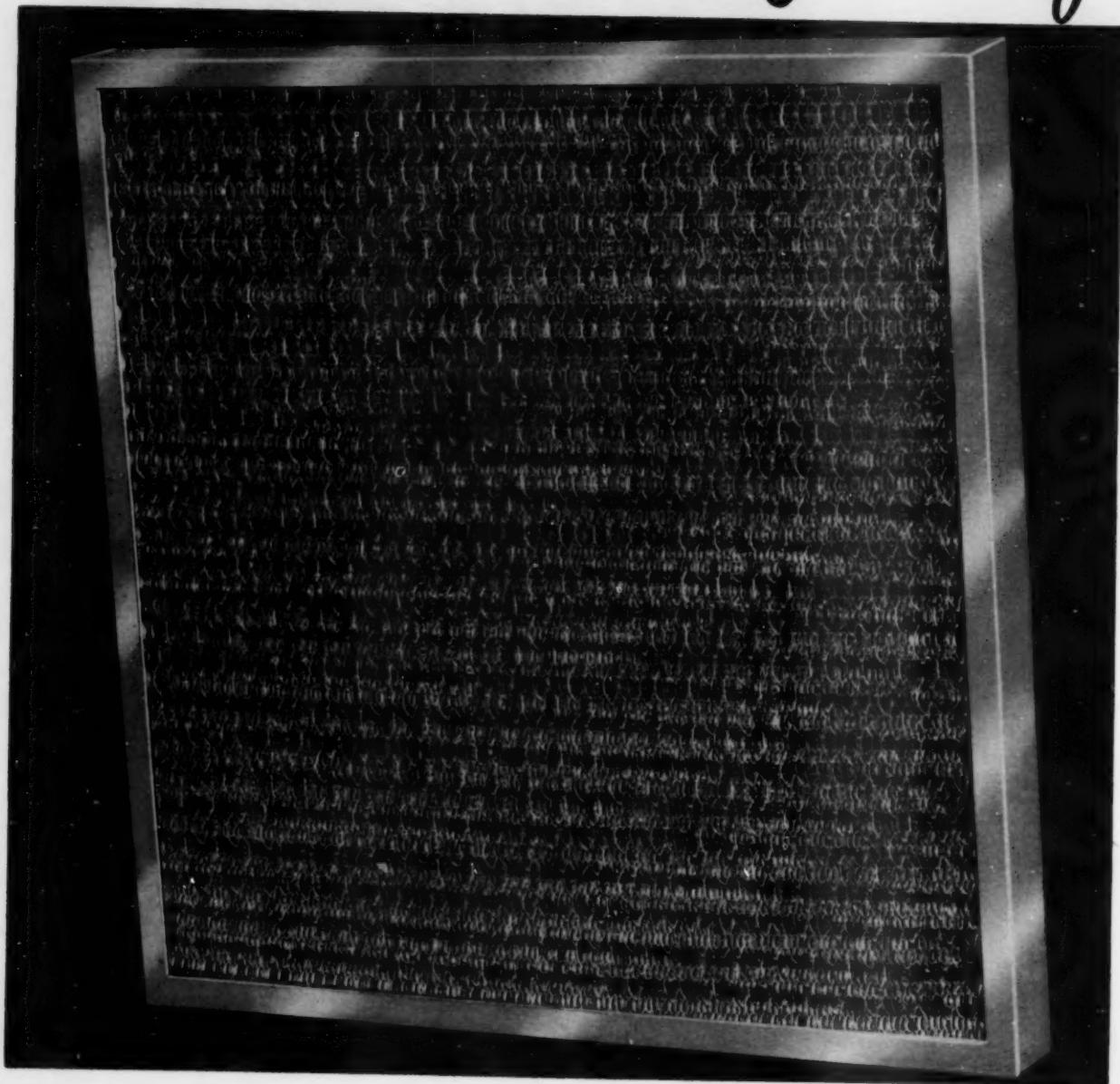
City _____ Zone _____ State _____

Individual's Name _____

Type of Business _____

Evans

Completely
Lifelong



New All Aluminum **AIR FILTER**

**OPENING AN AMAZING NEW FIELD
IN SALES AND PROFITS . . . PLUS
Guaranteed Territory Protection**



Revolutionary New Design!

Filter pack contains a series of machine stamped, all aluminum grids. Every grid precision made for absolutely exact size openings . . . exact measured corrugations . . . to produce precision filtering of air.

Burr edge on every opening gives extra filtering efficiency. Top aluminum stamped grid designed has larger openings to prevent matting of lint.

The FIRST all aluminum filter with every part originally created for filtering of air only.

Revolutionary New Performance!

Less resistance to air flow than ever thought possible. More controlled turbulence to trap dust. Air must travel more than double the thickness of filter from inlet side to outlet side. Every side and angle of filter grid scientifically designed to present more area and sharper edges for gathering and holding dust. Lower resistance to air flow permits greater coil efficiency than heretofore thought possible. Saves fuel. Filters last a lifetime. Used dry or with oil. Can be cleaned "clean" in a few minutes with hot water and used over and over again for years and years.

Greater Profits Per Unit!

The Evans Merchandising Policy is something completely new. It protects distributors, jobbers and dealers on sales.

In fact it GUARANTEES this protection.

If you are now handling an old-fashioned line of filters which is not giving you adequate profits, adequate customer satisfaction and adequate territory protection, then by all means get the complete Evans story on both this new lifetime filter and the new Merchandising Policy. It positively has no equal.

INVESTIGATE NOW! MAIL THIS COUPON TODAY!

THE GEORGE EVANS CORPORATION, MOLINE, ILLINOIS

GENTLEMEN: Please send me: Descriptive Literature Merchandising Policy Price Lists

I WANT TO LEARN HOW TO MAKE MORE MONEY OUT OF THE FILTER BUSINESS.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____

We're Betting

Coleman invests millions in your leadership

—says Sheldon Coleman, President of The Coleman Company



The manufacturer and the dealer that get the business must "deliver" the goods. Now Coleman delivers the full line, the individual product variety, the improved features, the appealing low prices—all a neat new package that gives the Coleman dealer a real selling edge. It's guaranteed performance for the buyer, guaranteed buyer appeal for you.

Lower Prices—Greater Merchandising Strength—More Diversified Product—to help you in your drive for sales and profits in 1954

Prices are lower—though costs are not. We have lowered our gross margin substantially to give you bedrock competitive prices. A real investment in *your leadership*—and your profit.

Our line is deeper, more diversified than ever. From space heater to complete year-round air conditioning—single-line identity gives you increased selling efficiency with real advertising sizzle. The addition of new horizontal furnaces and new self-contained and remote residential type cooling units, as well as commercial units in 2, 3, and 5 ton capacities, conditions the market, top to bottom.

Coleman engineering improves each product. Top talent in design and application gives Coleman products top billing in customer acceptance. Coleman's continuous program of product improvement means profit improvement for you.

Strong national advertising clinches customer acceptance. A consistent year-round program in national magazines and other media keeps customer demand active in your area. Coleman advertising conditions your market with news on its full line.

Coleman stands behind its line—stands behind you—in a leadership support program of merchandising and sales that puts you way out front. Why not join the aggressive Coleman dealer organization for leadership in sales and profit? The Coleman distributor in your area will help you get started—see him today—write us if you need his name and address.

Sheldon Coleman
President,

The Coleman Company, Inc., Dept. 152-AA, Wichita 1, Kansas

on Your Future

Coleman Blend-Air. is 5 years and 150,000 homes old!
NOW year-round air conditioning with exclusive features!

New improvements! Low 1954 prices!

A new standard in cooling and heating!

GREATER FLEXIBILITY TO FIT ANY SPECIFICATIONS

Now 14 year-round heating-cooling systems! For residential and commercial application, cooling capacities from 2 to 5 tons. 3 new self-contained units, including the most compact 5-ton unit on the market. Give twice as much positive humidity removal as ordinary systems. Quieter in operation because condensing unit may be installed in remote location.

Now 3 models Water Misers! (compressor-condenser) Two, 3 and 5 ton capacities. They install anywhere—in garage, for instance. Coleman Water Misers cut cooling water costs 97%, electricity 25%, eliminate cooling tower problems. Water Misers operate more economically, with less noise, and are more accessible for service.

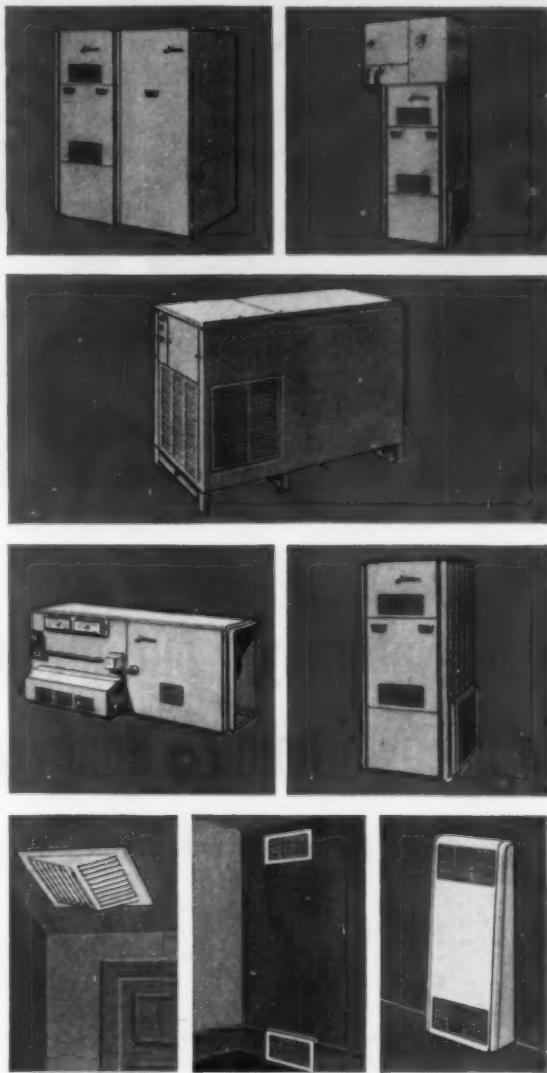
Three new horizontal furnaces! A total of 18 models now in the Coleman line. Horizontals are designed for space-saving applications, and are rated at 85,000, 100,000 and 140,000 BTU input. Greater flexibility of manifold and control locations for ease of installation. All Coleman furnaces have long-life burners and combustion chambers.

New Blenders! Ceiling Blenders direct air flow to outside walls and windows for better perimeter cooling and heating. Ideal for kitchens, bathrooms, etc., or to supplement outlets in large rooms. Install with minimum plaster-cutting, eliminate redecorating expense in old homes. They install quickly, easily. Adjustable Concealed Blenders fit neatly in standard walls, between studs. Cabinet Blenders are ideal for installations in existing homes.

OIL GAS LP-GAS

Comfort Costs So Little
with

Coleman®



CEILING BLENDER

CONCEALED BLENDER

CABINET BLENDER

Blend-Air.®

America's Leader in Home Heating and Air Conditioning



"Naturally I put the best in my own home - Honeywell Zone Control"

— says heating dealer Michael Buyukas of Glen Rock, New Jersey



"I've planned all kinds of different heating jobs—for all types of houses. That's why I got such a kick out of planning the heating in my own new home!"

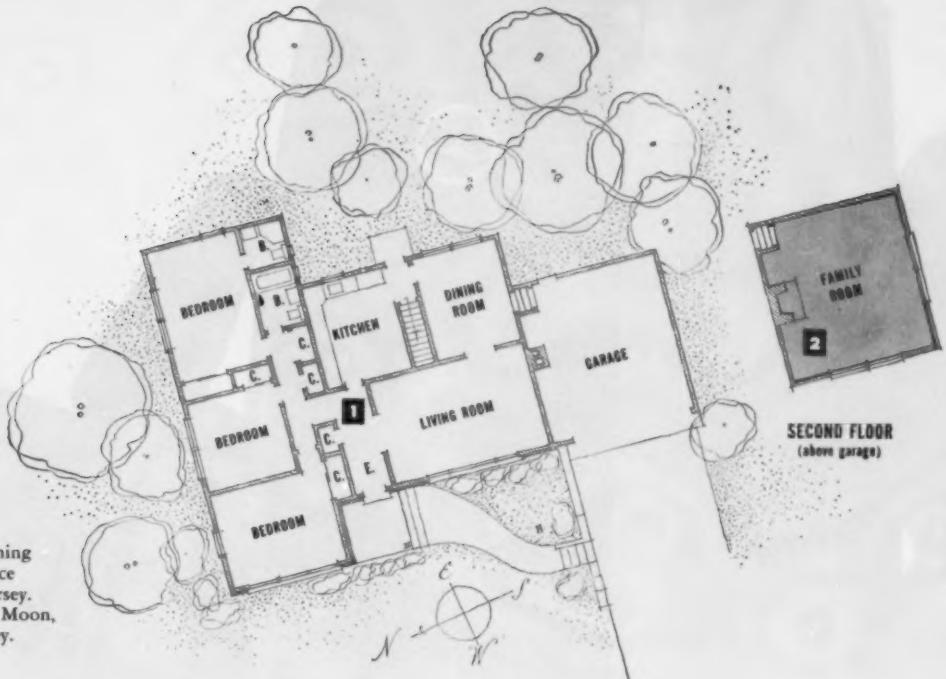
"Naturally, I wanted the best for my own place. So I installed Honeywell Zone Control. Now I can be sure of comfortable, even warmth in every part of the house . . . all winter long."

"Our firm has built a reputation for quality heating installations here in Glen Rock. One of the reasons for this is that we choose our equipment very carefully. And we stick with equip-

ment that always gives us dependable results—like Honeywell Zone Control.

"Zone Control's flexibility makes it easily adaptable for different family living habits. Once we got to know all the potential for Zone Control, we were set for *any* home. We don't have to worry now about conditions such as wind, sun, exposure, glass, zero weather, or other factors that affect temperature."

"Zone Control is the real answer to modern heating comfort. I know my family and I are certainly pleased with our *comfortable* new home!"



"Honeywell Zone Control fits our plans perfectly!"

says Michael Buyukas . . .

"We wanted our house divided in a special way. We wanted one area for living-dining, service and sleeping. Then we wanted a family room as another area where we could all relax together. We worked out plans with our architect so that our family room went over the garage.

"Zone Control was the natural answer for real comfort in each of these areas. So we laid them out as two zones—each with a separate thermostat system.

"The thermostat which serves the living area above (Zone 1) gives us wonderful comfort. It easily handles

east, west and north exposure problems created by cold winds. In winter, these are quite different from the family room which faces south.

"The separate thermostat in the family room (Zone 2) compensates for solar heat that often gives extra warmth to the south side of the house. And when the family room is not in use, the thermostat can be set back to save fuel.

"Honeywell Zone Control is a terrific sales story in itself, and it's certainly paid off handsomely for me—in my own home—and in my customers' homes, too!"

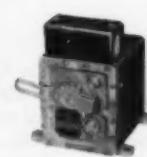
Honeywell has controls like these for any type Zone Control job



Electronic Chronotherm — famous, fully automatic clock thermostat. Provides night shut-down, automatic morning pick-up for 24-hour control.



Electronic Weathercaster — located outside the house. It senses changes in the weather, and signals the electronic system indoors, automatically.



Medutrol Motor — gives fast, accurate control of dampers and valve assemblies, gives many years of trouble-free service.

For complete information and application data on Honeywell Zone Control, call the Honeywell office nearest you. Or . . . write Honeywell, Dept. AA-5-104, Minneapolis 8, Minnesota.

112 OFFICES ACROSS THE NATION

MINNEAPOLIS Honeywell



First in Controls



Mor-Sun Forced Warm Air Furnaces offer a new standard of quality for better home heating. Thanks to Mor-Sun's design and operational superiority—at competitive prices—home heating contractors who display the Mor-Sun trade mark are doing more business with less effort and at a greater personal profit. If you don't have all the facts about Mor-Sun's tremendous potential, send us your name and address today. We'll send you all the details on this newest standard of home heating quality and comfort.

MOR-SUN FURNACE DIVISION

MORRISON STEEL PRODUCTS, INC.
609 Amherst Street, Buffalo 7, New York

Manufacturers of gas and oil operated forced warm air furnaces and air conditioners in styles and capacities for every heating and cooling requirement.

Complementing Mor-Sun Forced Warm Air Furnaces in size, appearance, performance and quality, new Mor-Sun Summer Air Conditioners provide efficient, economical cooling and air conditioning for both residential and light commercial installations.

Mor-Sun Air Conditioners can increase your sales potential 100%. Every furnace installation on your books is a prospect for air conditioning. Available in 2 and 3 ton capacities—air or water cooled—Mor-Sun Air Conditioners can be installed almost anywhere...as an ideal addition to a Mor-Sun Warm Air Furnace or as an individual cooling unit with any make heating system.

Identify yourself with this complete Mor-Sun line of home heating and air conditioning equipment backed by new intensified sales promotion and advertising activities. You'll be in one of the best positions to get your share of both new construction and home modernization business. Be sure you're getting the greatest return on your selling efforts...send us your name and address. Let us tell you about Mor-Sun...you'll find it pays!



You get so much more with MOR-SUN



General Electric motors make
good room air conditioners
even better!

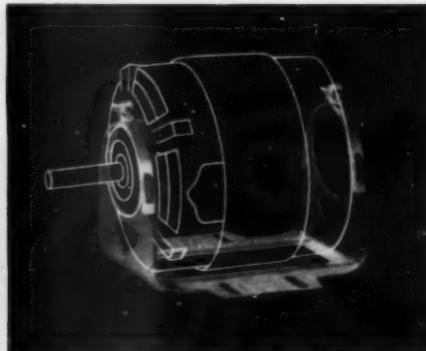
Here are six reasons why your product



1. VERSATILE all-angle unit bearing design and sealed-in lubrication system permit motor to be mounted in any position.



2. ATTRACTIVE APPEARANCE of motor improves the appearance of your product in applications where the motor will be visible.



3. MOUNTING CONVENIENCE helps solve product design problems. Use resilient cradle-base or end-ring mounting.

Put the selling advantage of G-E motor quality into your product

Use G-E shaded pole motors

G-E shaded pole motors help sell the products they power—because quiet, dependable operation and lifetime lubrication with unit bearing construction are big sales advantages.

HERE'S HOW G-E shaded pole motors pay off in savings in design, manufacture and shipping: all-angle operation permits more versatile design and easy installation; light weight cuts down the over-all weight of your product, makes handling easier and cuts shipping costs. And because it is compact and small, a G-E shaded pole motor fits current trends to smaller, better-looking room air conditioners.

FROM DESIGNING, through production to fast selling, a G-E shaded pole motor is best for a far better product, whether you design and build furnaces, cooling fans, unit heaters, condensing coolers, exhaust fans, evaporative coolers or other air-moving devices.

FOR COMPLETE INFORMATION on available ratings contact your nearest General Electric Apparatus Sales Office today. General Electric Company, Schenectady 5, New York.

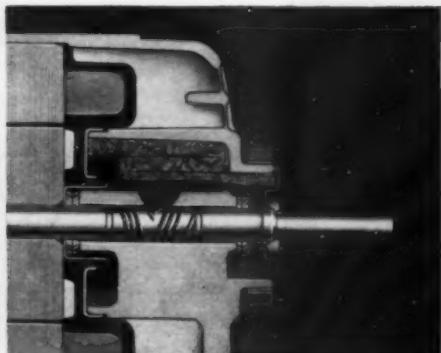
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You can put your confidence in—
GENERAL ELECTRIC

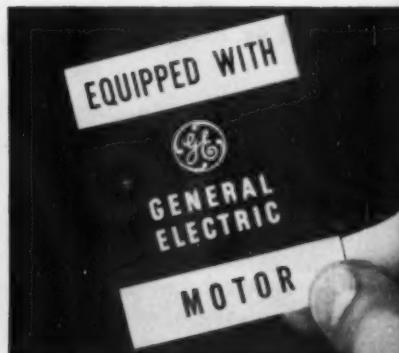
should use a G-E Shaded Pole Motor



4. **QUIET OPERATION** is a big selling feature. It is gained by accurate alignment and positive lubrication.



5. **LUBRICATED FOR LIFE** avoids inconvenience of adding lubricant . . . reduces maintenance to a minimum.



6. "EQUIPPED WITH A G-E MOTOR" helps sell your product by backing it up with G.E.'s reputation for quality motors.



YOU'LL SELL MORE PROFITABLE JOBS

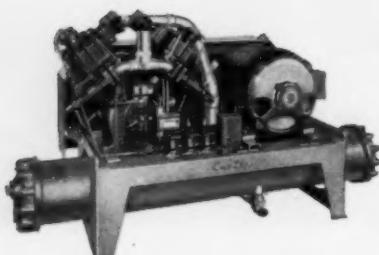
with the complete line of

Curtis
AIR CONDITIONING AND
REFRIGERATION EQUIPMENT

Every product in the Curtis line is built with quality material and workmanship.

Curtis equipment is known around the world for its dependability and efficiency.

With the complete Curtis line, you can handle any installation for **Home, Office, Store, or Factory.**



Condensing units—through 80 tons



Evaporative Condensers,
Cooling Towers and Air
Handling units to match



NEW 1954 Curtis
Room Air Conditioner—an
attractive, efficient unit with a
BIG market potential

Packaged Units—
2, 3, 5, 7½ and 10 tons
Choice of open or semi-
hermetic compressors...
and 15 ton packaged
Central type units



Residential cooling
and heating units

You may qualify for a direct factory franchise.
Write us, using your company letterhead.



National advertising in *Saturday Evening Post*, *Time*, *Newsweek* and *House and Home*, plus many other publications helps sell Curtis to your customers and prospects. Attractive new sales literature is available to help you sell in your local area.

765

**CURTIS REFRIGERATING
MACHINE DIVISION
OF CURTIS MANUFACTURING CO.**

1982 KIENLEN AVENUE
ST. LOUIS 20, MISSOURI

EVERY HEATING or AIR CONDITIONING JOB IS A BETTER JOB WHEN YOU USE H&C PRODUCTS

**CHOOSE THE CORRECT REGISTER, GRILLE OR
DIFFUSER FROM THIS ALL-STAR LINE UP . . .**

CONVENTIONAL A.C. SYSTEMS

SIDEWALL AND BASEBOARD



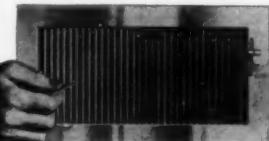
No. 74 DESIGN
Low-Cost QUALITY registers.



No. 75 DESIGN
The only registers with the TURNING BLADE VALVE.



No. 76 DESIGN
Fin type face with multi-shutter valve. Very popular.



No. 88 DESIGN
Adjustable Bar Type. Multi-shutter valve. Sizes up to 20" x 30".



CEILING DIFFUSER
Watch for announcement of new ceiling diffuser damper.

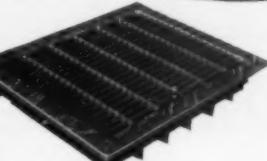
GRAVITY SYSTEMS



No. 130 SERIES
Baseboard Register, adjustable fin type.



No. 330 SERIES
Sidewall Register, companion to No. 130.



No. 210 "NO-FLEX"
Floor Register. Sturdy and rigid.



No. 265 "NO-FLEX"
RETURN AIR FACE. Large free area.



PERIMETER SYSTEMS



No. 401 SIDEWALL DIFFUSER
With Volume Control Valve. Blankets wall of average room.



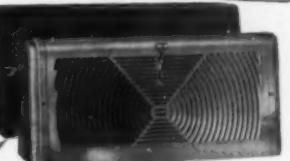
No. 411 FLOOR DIFFUSER
With opposed louvers for perfect air pattern.



No. 44 SERIES CONTINUOUS
BASEBOARD—Requires no tools to assemble or disassemble. For installation in multiples of 2' and 4'.



No. 452 HIGH CAPACITY
BASEBOARD UNIT (2 ft.)

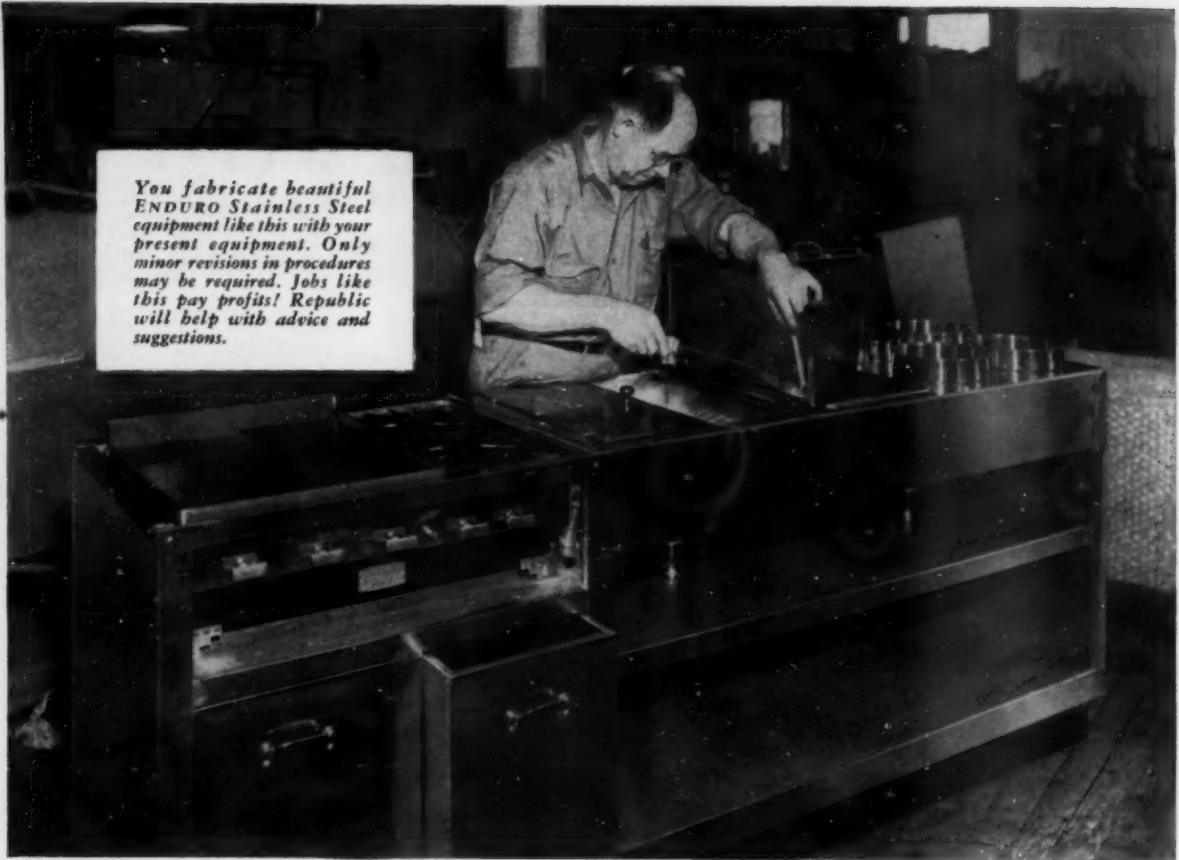


No. 405 BASEBOARD DIFFUSER
With floor opening. Available now.

HART & COOLEY MANUFACTURING CO.

100 EAST KALAMAZOO
HOLLAND, MICH.

PRODUCT OF THE WORLD'S LARGEST and MOST PROGRESSIVE PRODUCERS OF REGISTERS and GRILLES



You fabricate beautiful ENDURO Stainless Steel equipment like this with your present equipment. Only minor revisions in procedures may be required. Jobs like this pay profits! Republic will help with advice and suggestions.

Enduro's Bonus Benefits Mean Bonus Business for You

Equipment buyers in your area may have dozens of different reasons for specifying certain materials. One may require ease of cleaning. Another, handsome appearance; or, resistance to weather. Still another, extreme wearability. No problem. By fabricating and furnishing equipment made of Republic ENDURO Stainless Steel, you can satisfy them all.

That's what we mean by ENDURO's "bonus benefits." In ENDURO equipment a buyer gets the exact advantages he wants. And, he gets all of ENDURO's other advantages as a "bonus." Because, no other commercial metal offers *all* the advantages of stainless steel.

ENDURO is easy to clean and to keep clean. It resists rust and corrosion. It resists abrasion and denting.

It resists heat, and the action of most acids and alkalies. It does not contaminate metallically. It has no applied surface to chip, peel or wear away. It keeps its bright handsome appearance through the years. It is easy to fabricate on your present equipment.

Sell the "use." Show how the ENDURO equipment you fabricate meets the needs and supplies "extras," too. Republic will help you get going as an ENDURO specialist so that your shop can cash in on bonus business. Write:

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N.Y.

**REPUBLIC
ENDURO STAINLESS STEEL**



Other Republic Products include Black, Galvanized, Galvannealed and Electro Painted Sheets — Tinplate Sheets — Bolts and Nuts — Tubing



You Always Know Where
these Furnaces Stand

Consistent QUALITY

Consistent PRICE

SEQUOIA

makes forced air gas equipment you can depend upon...and on today's far more competitive market, consistency is noteworthy.

Inside a SEQUOIA furnace still go parts of industry-recognized highest quality—GE, M-H, Dust-Stop, General, etc. That's important now! And so is price stability, and SEQUOIA's guarantee that continues to back its dealers to the hilt! True, you can buy less expensive furnaces than SEQUOIA *Closeteer* (upright), *Rev-flo* (counter-flow) or *Horizontal*. But you can never buy better quality at competitive prices. This all-around dependability...so important to heating dealer, builder and architect alike...has been earned in years of consistent manufacturing quality.

FOR FULL INFORMATION ON INDIVIDUAL MODELS, OR THE COMPLETE LINE, CONTACT ANY SALES OFFICE:

RICHMOND, VA., Jack Muther, 1304 Belleville St.
BIRMINGHAM, ALA., W. M. Dunbar & Co., 1720 Second St.
NEW ORLEANS, C. Rollins Brown, 4508 Dreux Avenue
CHICAGO, Joseph E. Wellmuth, 11630 South Artesian
ST. LOUIS, J. R. Layton, 5762 DeGiverville Avenue
AKRON, OHIO, Harry O. Donnelly Co., 33 Frank Blvd.
OKLAHOMA CITY, Guy W. Gentry, Post Office Box 7131
DALLAS, Bob Sheveland, 1208 National City Building
PASADENA, CALIF., Glenn A. Barnes, 15 N. Oakland Avenue

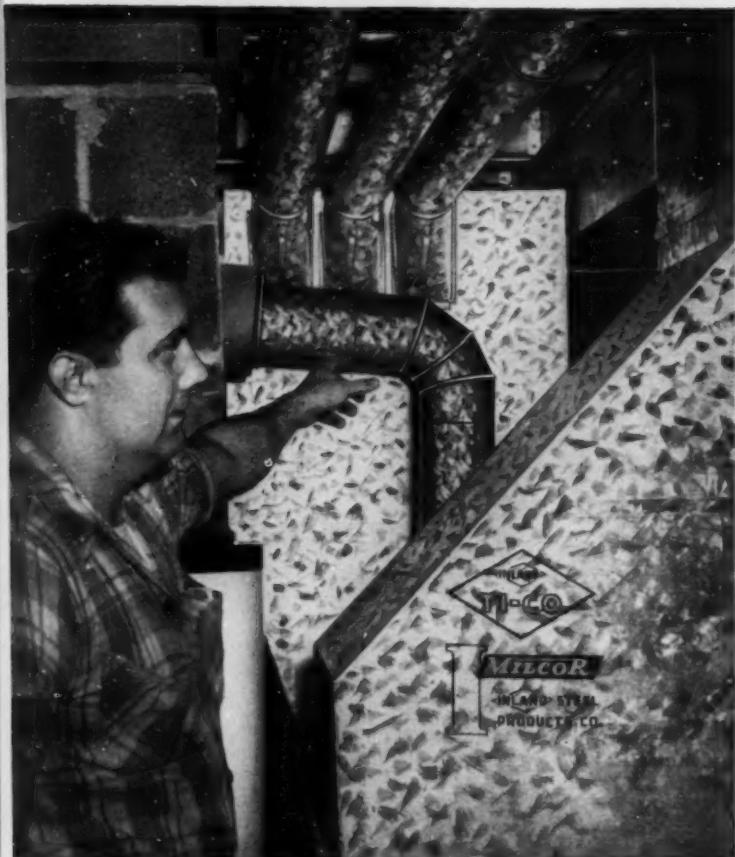
Sales Department

SEQUOIA MANUFACTURING CO.

1000 Brittan Avenue • San Carlos 5, California

Stocks maintained in many major cities.

"Galvanized gives you more!"



That's why I insist on

MILCOR*

Furnace Pipe and Fittings

— says Wilford Scholl, foreman,
J.W.L. Heating Co.,
3231 Harlem Road, Buffalo 25, New York

The extra strength of steel is reason enough to standardize on galvanized for your heating jobs. But there are more reasons why the galvanized you use should be *Milcor Furnace Pipe and Fittings*:

When you pound and hammer Milcor galvanized, the galvanizing won't flake off.

Milcor jobs go up fast. Milcor Furnace Pipe and Fittings are easy to handle. They save time, trouble, and effort. Fast assembly cuts job time, gives you increased profits.

Special construction features save you complicated work with special tools, rivets, screws, etc. All units simply slip together, for a tight, lasting joint.

There are Milcor accessories to fit every condition. So your roughing-in and assembly time is reduced even more. You give your customers snug-fitting, good-looking jobs that stand up for years.

The Milcor line makes every on-the-job hour more productive and more profitable for you. Use Milcor Galvanized Furnace Pipe and Fittings on all your jobs.

Prices are available from branch listed below, or from your heating jobber.

INLAND STEEL PRODUCTS COMPANY

4023 WEST BURNHAM STREET • MILWAUKEE 1, WIS.

BALTIMORE 5, MD., 5300 Pulaski Highway — BUFFALO 11, N. Y., 64 Rapin St. — CHICAGO 9, ILL., 4301 S. Western Blvd. — CINCINNATI 25, OHIO, 3240 Spring Grove Ave. — CLEVELAND 14, OHIO, 1541 E. 38th St. — DETROIT 2, MICH., 690 Amsterdam Ave. — KANSAS CITY 41, MO., P. O. Box 918 — LOS ANGELES 58, CALIF., 4807 E. 49th St. — NEW YORK 17, N. Y., 230 Park Ave. — ST. LOUIS 10, MO., 4215 Clayton Ave.

8-124

*Reg. U. S. Pat. Off.

Home Cooling Improves Health

A NATIONWIDE survey of 325 families living in homes air conditioned by Servel gas operated units was recently completed by the American Gas Association. Survey results were based on personal interviews with 782 adults and 390 children. More than two-thirds of the families in the survey reported improvement in the general health of all members of the household. In 224 homes, the family rested better at night, in 50 cases there were fewer colds, and 68 reported relief from hay fever or pollen allergies. A large percentage credited improved atmospheric conditions in the home with having perked up appetites of family members, and the health and comfort of infants was reported increased. Only 12 individuals, according to the report, claimed adverse effects.

Interviewees were asked if air conditioning had helped them save medical expenses. In 47 homes the answer was "Yes," in 180, "No," and in 98 others no opinion was given. Among those who answered affirmatively, savings were judged to range from \$25 to more than \$200 a year.

"Is there any difference in the household cleaning work required in your home?" the families were asked. Two hundred and seventy-five housewives agreed that important labor-saving advantages resulted from air conditioning. Savings in cleaning expenses were reported ranging from \$30 to \$550 a year.

The survey also showed that more than 90 per cent of those interviewed consider the air conditioner essential or at least desirable in the home, and 82 per cent expressed the belief that air conditioning substantially increases the value of their homes.

"Defense Against Recession"

THE COMMITTEE for Economic Development recently published the results of a two year study by its Research and Policy Committee in the report, *Defense Against Recession: Policy for Greater Economic Stability*. This report — a long-range appraisal of the country's ability to resist and recover from economic declines — "is not designed to be a blueprint for action," according to the Research and Policy Committee chairman, Frazer B. Wilde. "What we have tried to do is to clarify the nature of the problem and to point out ways in which solutions may be found."

"Changes since before the war in our financial, budgetary and psychological situation," the report points out, "have greatly reduced the possibility of our being drawn into a deflationary spiral. While this does not guarantee that there will be no recessions, it does mean that what in earlier circumstances might have turned out to

be a severe depression would be a moderate recession."

The committee stressed the important part that the individual business has to play in increasing economic stability and offered recommendations for improved business policy with respect to inventories, capital investment and sales effort to help avert recessions. Unstabilizing inventory practices, the committee noted, would be greatly reduced if trade associations and government agencies would increase the flow of more up-to-date and complete statistical information on inventories, sales, etc.

Many factors are cited by the committee as tending to make the economy better able to overcome recessions than in the past. The country's financial condition is stronger. Business and farm debts are lower, relative to assets and earnings. Private debt, notably mortgages, is on a longer-term basis. The total of consumers' assets is large. Banks and other financial institutions, with the Federal Reserve System able to supply funds as needed and with a heavy proportion of deposits guaranteed, can keep credit channels open and encourage expansion. Longer-term planning by business has increased.

The committee proposes a number of measures to strengthen the stabilizing factors already existing in the economy, such as unemployment insurance, and recommends various measures that would be available as emergency programs in the event of serious decline.

Copies of the report may be obtained from the Committee for Economic Development, 444 Madison Ave., New York 22.

NWAHACA Committees to Meet

C. B. PHILLIPS, president, National Warm Air Heating and Air Conditioning Association, has called meetings of the board of trustees and all committee members. The meetings will be held at the Edgewater Beach hotel, Chicago, June 10 and 11.

Sees Industrial Construction Boom

THE UNITED STATES can look forward to a large demand for additional construction of plants and factories, according to Norman P. Mason, chairman of the construction and civic development department committee of the national Chamber of Commerce. Mr. Mason's prediction is based on an analysis of spending for plant and equipment in the last several decades. In brief, the survey shows that, while industrial construction has topped \$2 billion for the past three years, expenditures for industrial plants have lagged far behind investment in other capital goods.

(Please turn to page 34)

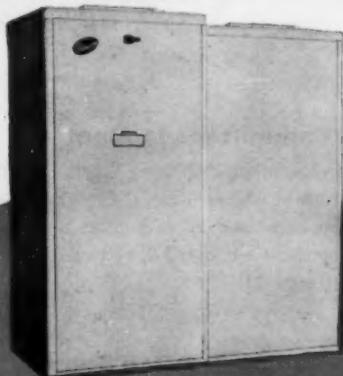
the **SHANA-Air** plan

a new **power**

**In year-round home
AIR CONDITIONING!
a dynamic combination of:**

● A Superior Home Air Conditioner

The SHANA-AIR home air conditioner is the answer to the tremendous demand for a superior, completely packaged unit . . . perfected as the result of 30 years of research, technical and practical installation experience by men who have LIVED with home heating and air conditioning!



Added sales impact with a

SHANA-AIR summer
air conditioning unit

SHANA-HEAT hi-bay
and counterflow oil
or gas fired winter
air conditioner

SHANA-DUO

THE IDEAL COMBINATION UNIT
Complete, self-contained units

The demand has been for a twin unit . . . summer air conditioning and winter air conditioner. Here is the finest to be produced in the industry to date!

The SHANA-AIR Complete Home Air Conditioning unit is one of the select 17 modern living products to be displayed at the Commonwealth Edison Company in Chicago in the Electric Association Show, May 10th to July 16th.

● A Forceful Sales Producing Program

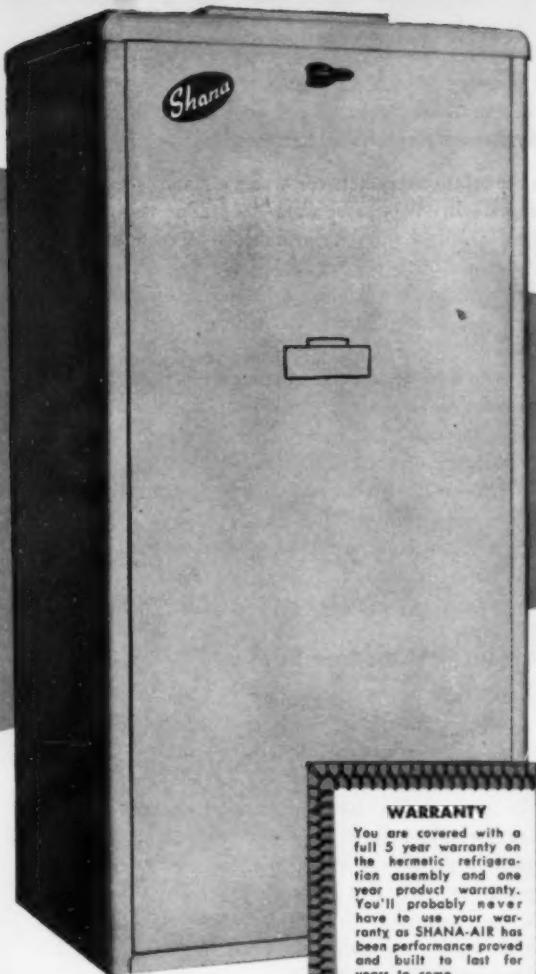
The SHANA-AIR specialized selling plan tells you how to sell air conditioners with a minimum of expense and effort . . . and a maximum of profit! SHANA-AIR takes the guess work out of selling home air conditioning by providing you with a proven, experienced program . . . adaptable for everyone!

**Priced Below
Competition**

Imagine! Superior quality . . . and still priced far below competition. You can own the home air conditioning business in your area and show profits you never believed could exist in this field. Remember, home air conditioning is now a year-around business!

75 units were sold in February and March by Enterprise Heat and Power Company—a firm known throughout Chicagoland for over 30 years . . . typical of fast, proven SHANA-AIR sales!

We're looking for SOUND Distributors, Jobbers and Representatives interested in building a volume with a substantial, nationally-recognized manufacturer, to meet the growing demand for Complete Home Air Conditioning.



4 ROW SLOPING COIL

... gives better distribution and better dehumidification than a flat coil
... more coil face area is exposed to air for better cooling.



BLOWER POWERED BY $\frac{1}{2}$ H.P. MOTOR

... is statically and dynamically balanced ... blower is whisper quiet, variable capacity and slow speed ... the results of years of research and practical installation experience.



ENTIRE REFRIGERATION ASSEMBLY SLIDES OUT

... of the cabinet for easy inspection and service.

Additional forces which give shana-air impact!

... How to develop leads ... the easy way to sell home air conditioning ... and to get multiple sales from referrals.

Our Sales-Tested Consumer Presentation Makes Selling SHANA-AIR Simple and Profitable!



The SHANA-AIR PLAN takes all the mysteries out of home air conditioning and diminishes sales resistance. We will supply you with all promotional material to create leads as well as inquiry-tested ads and mailers. The SHANA-AIR PLAN means a new life for complete home air conditioning sales.



SHANA MANUFACTURING CO.
188 W. Randolph Street
Chicago 1, Illinois

SHANA MANUFACTURING CO.

188 W. Randolph Street
Chicago 1, Illinois

Gentlemen:

I am interested in knowing more about SHANA-AIR HOME AIR CONDITIONING.

DEALER DISTRIBUTOR MFG. REP.

Others Please Specify

Name.....
Firm.....
Address.....
City..... Zone..... State.....

WHAT'S HAPPENING —

(Continued from page 31)

Mr. Mason suggested that part of the reason for the lag lies in the relatively greater increase in construction costs than for machinery and in the ability of industry to make more efficient use of existing space by buying modern machinery and making improvements through installations of better lighting, air conditioning, etc.

"But by this time," he said, "it seems probable that the maximum opportunity for increasing the capacity by purchase of new manufacturing equipment alone has been passed; and, if this is not yet true, it must soon be so. We are simply catching up with the number of existing structures in which such additions of equipment can be made. Moreover, the march of deterioration and obsolescence of existing structures goes on, thus reducing the number eligible for improvement."

Artisan Census Shows Warm Air Leads

THE FACT that warm air dominates the central residential heating market is brought out in a special tabulation of heating data reported in the 1950 Census of Housing. For example, almost 70 per cent of the central heating installations in existence in single family homes in 1950 were of the warm air type. From 1940 to 1950, the number of single family structures centrally heated by warm air increased about 62 per cent, whereas the number centrally heated by steam or hot water increased only about 32 per cent during the same period.

The special tabulation was performed by the Bureau of the Census for American Artisan, and was done specifically to relate data on types of heating systems and kinds of fuels used to both single family and multi-family homes. Figures on coal, oil and gas usage are related to specific types of heating systems, with all data broken down by regions and states, urban and rural.

As indicated in the foregoing, the difference between the figures obtained from the special tabulation and those generally released by the Bureau of the Census is that American Artisan has segregated the single family and multi-family structures. Data on heating systems in terms of single family structures represents a close count of actual furnace and boiler installations. Here are some highlights of the data as related to single family homes:

- In 1950, the number of single family centrally heated homes reached about 12 million. That compares with about 7.9 million in 1940 so that in the 10 year period the increase amounted to about 52 per cent.
- Of that increase, warm air represented 3.2 million. Warm air heated single family homes went from about 5.1 million to 8.3 million, an increase of over 62 per cent in the 10 year period, and representing 78 per cent of the increase in centrally heated homes.
- The number of single family homes heated by steam or hot water went from 2.8 million in 1940 to 3.7 million in 1950, an increase of 32 per cent, as compared to the

warm air increase of over 62 per cent. In other words, wet heat accounted for only 22 per cent of the increase in centrally heated single family homes.

- Here is the relationship between warm air and wet heat in percentages. In 1940, there were 7.9 million centrally heated single family homes, of which 65 per cent were heated by warm air, 35 per cent by steam or hot water. In 1950, with 12 million centrally heated single family homes, warm air accounted for 70 per cent, steam and hot water for 30 per cent.

These figures add up to the obvious fact that there is a firm trend toward more central heating, with warm air accounting for more and more of the market.

A report of the tabulation, titled *How America's Homes Are Heated*, has been prepared by American Artisan. One copy has been reserved for each company in the manufacturing, sales and advertising divisions of the warm air heating and residential air conditioning industry. The price for additional copies is \$10.00 each.

BRAB Conducts Weather Survey

THE BUILDING RESEARCH Advisory Board of the National Academy of Sciences, National Research Council, reports that members of its climatic research committee, who represent most of the major design professions and businesses of the building industry, are surveying their respective organizations to determine what kind of climatic data is needed in their practices. The decision to make this survey was reached at a meeting held at the U. S. Weather Bureau recently. In a round table discussion, members of the committee outlined the general usefulness of climatic data in their own areas of specialization. These cover a variety of uses, ranging from data used in air conditioning and heating design to the questions of extreme conditions which sometimes affect construction operations on the site.

Members of the weather bureau staff described in detail the various kinds of publications now produced by the bureau to make data on climate and weather available to the public. These were summarized into a list of six publications selected by the weather bureau as being of particular interest to the building and construction industry. A description of these publications is being circulated as a part of the industry survey.

Among those serving on the committee are John R. Schreiner, Air-Conditioning and Refrigeration Institute, and Peter B. Gordon, Heating, Piping and Air Conditioning Contractors National Association.

To Stress Cooling During "Home Week"

AIR CONDITIONED homes are expected to play a prominent part during National Home Week, scheduled to be held September 19 to 26. The fundamental purpose of National Home Week, according to R. G. Hughes, president, National Association of Home Builders, is to illustrate the advantages of home ownership and to show the nation the latest ideas and methods in home building. Several thousand homes will be on display in all principal cities.

NIAGARA PRESENTS

Multi-Drive Power Table

for BEADING
CRIMPING
BURRING
TURNING
WIRING
FLANGING
ELBOW
EDGING
FURNACE -
COLLAR
EDGING
AND A MULTITUDE OF
OTHER SHEET METAL
OPERATIONS

• MORE PRODUCTION WITH POWER

Low cost hand operated bench machines are instantly converted to power machines* that will give many times the output per hour for each machine.

• FREES BOTH HANDS FOR WORK

The electric foot treadle controls the operation of the rolls, freeing the operator's arms so that both hands can guide the work.

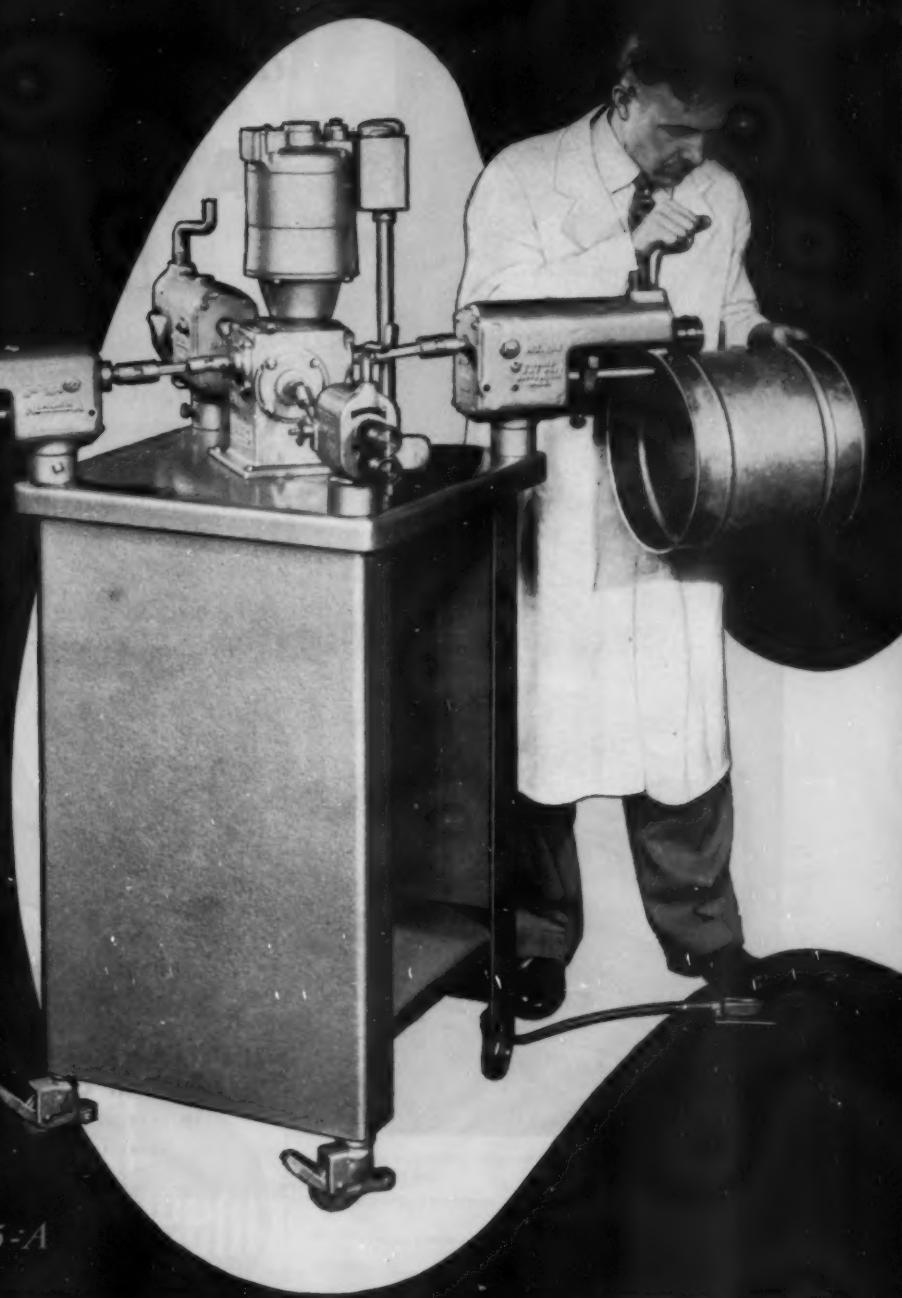
• ELIMINATES "TOOL HUNTING" AND
"TOOL SETTING"

We recommend that each position be set up for a certain operation so the operator can start to WORK immediately without wasting time hunting tools, rolls and gages.

• PORTABLE - COMPACT

• MOTORIZES YOUR PRESENT MACHINES

Write for New Bulletin 85-A



NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, N. Y.

America's Most Complete Line Presses, Shears, Machines and Tools for Sheet Metal Work

DISTRICT OFFICES: DETROIT • CLEVELAND • NEW YORK

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*This is why you should
always specify and buy*

ANEMOSTAT

Air Diffusers

*The largest selection of sizes and types for
conventional or High Velocity Systems.*

*Proven performance and design for every
engineering and architectural need.*

*A consistent record of prompt delivery and
customer satisfaction.*

ANEMOSTAT®

DRAFTLESS Aspirating AIR DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39th STREET, NEW YORK 16, N.Y.

REPRESENTATIVES IN PRINCIPAL CITIES

"No Air Conditioning System Is Better Than Its Air Distribution"

Plan NOW for summer profits...
from



...the important new
Summer advertising + selling
campaign for the new
Rheem **ROOM AIR
CONDITIONER**



Here is a new opportunity. Let this page start you planning NOW for a big new profit! Don't wait for the summer rush. The new Rheem Room Air Conditioners, famous products of a famous manufacturer, have no superior in the air conditioning field. They have great advertising

points, great selling points. And they deliver all that they promise in the big advertising campaign, now ready for summer use in newspapers, radio and co-operative sales literature. Send the coupon now for full details of profits, product and advertising support!

Send coupon today—sure profits this summer!

RHEEM MANUFACTURING COMPANY AA-5

Send your request to nearest Sales Office, addresses of which are listed at left.

Please send full information on Rheem Room Air Conditioners.

NAME _____

ADDRESS _____

CITY _____ STATE _____

You can rely on

RHEEM MANUFACTURING COMPANY

Sparrows Point 19, Maryland
7600 S. Kedzie Ave., Chicago 29, Ill.
1025 Lockwood Dr., Houston 20, Texas
4361 Firestone Blvd., South Gate, Calif.
800 Chesley Ave., Richmond, Calif.
3693 E. Marginal Way, Seattle, Wash.



Here's the installer's AIR CONDITIONER



"Armstrong Companion Unit"
Summer and Winter Air
Conditioners, with Automatic
Changeover Damper



Armstrong's two huge plants serve both sides of the continent quickly, economically. A warehousing distributor, with a complete Armstrong inventory, is within a stone's throw of everywhere. Wherever you are, Armstrong's distribution system is set up to serve you. It's better, quicker, more profitable . . . for you.

Now, with Armstrong, you can sell summer air conditioning without excessive installation and service costs. *No handling of refrigerant.* No intricate valves to set. No interior wiring. Every Armstrong unit is ready to produce refrigerated, filtered and dehumidified air *when you receive it*, once the cabinet is assembled and outside connections are made.

With it, you profit from the skills and the equipment you now have.

Afraid of service complications? You needn't be. A written five-year guaranty on the *entire* hermetically-sealed refrigeration unit goes with each air conditioner. Even if the unusual happens, and this unit fails, you simply slide it out of the cabinet, slide in a new unit (obtained from your nearby Armstrong wholesaler), and ship the defective unit back to the factory.

Normal service includes cleaning the condenser and drip pan, and replacing dirty air filters. That's all. You never need to break into the refrigerant system.

A complete line, too. Vertical and horizontal "Companion" models for use in connection with any good warm-air furnace. "Package unit" space coolers for use without ducts. All in a range of sizes to cool any home or storeroom.

Call your Armstrong wholesaler today. Get the air conditioning *profit* picture. Or drop us a line for specification sheets.

Please address Dept. AA at our plant nearest you.

ARMSTRONG
FURNACE COMPANY

COLUMBUS,
OHIO



DES MOINES,
IOWA

A Complete Line
Warm-Air Furnaces — Gas, Oil, Coal
Summer Air Conditioners

Controls WARM or COOL FORCED AIR WITH EQUAL EFFICIENCY

NEW 1954
HIGH EFFICIENCY MODEL

UNBEATABLE LOW PRICE

TITUS Perimeter Diffuser

Free!

**NEW 1954
PERIMETER DIFFUSER
CATALOG**

The latest data on design, construction, performance and installation of Titus Perimeter Diffusers.

**INSTALLATION
DESIGN MANUAL No. 1**

New. Authoritative. Solves the Perimeter installation problems connected with both heating and cooling. Edited by our Engineering Department.

Use the postage paid reply card at the right and get these two important books now... also new low prices and discounts.

TEAR OUT AND
MAIL TODAY!

TITUS INC., WATERLOO, IOWA

Gentlemen: Please rush me the following FREE information.

- | | |
|--|--|
| <input type="checkbox"/> New 1954 Perimeter Diffuser Catalog | <input type="checkbox"/> Booklet on Trends In Warm Air Heating |
| <input type="checkbox"/> New 6-page Installation Design Manual No. 1 | <input type="checkbox"/> Display Kit Information |
| <input type="checkbox"/> Sample Diffuser
(Invoice sent with sample) | |

Name _____

Address _____

City _____ State _____

American Artisan May, 1954

TITUS Better 8 Ways

• FOR HEATING AND COOLING

Low pressure requirements. Cool air easily forced high up wall. Maintains broad pattern for heating. No draft or stagnation areas.

• LOW COST

No roughing-in. No callbacks. More complete factory assembly speeds installation. No metal cutting necessary.

• GREATER FREE AREA

Lowers pressure requirements. Holds noise to absolute minimum. Permits gentle circulation with no draft.

• BAFFLES GIVE 180° DIFFUSION

Directs air where it is most needed. Eliminates turbulence. Control surfaces require less pressure to obtain proper CFM.

• ONE BOOT AND DAMPER SIZE

Easy to stock and install. Saves labor. New inconspicuous damper control. No breakable chains.

• ONLY 2 PARTS

Back, sides and top are welded together. Simplify installation. Two screws are used to fasten diffuser in place.

• 3 MODELS

No. 50: 17" in length. No. 100: 30" in length. No. 150: 60" in length. No. 150 consists of 2 No. 100 diffusers joined with clips.

• NEW STYLING

Lower, narrower silhouette. Streamlined. Recesses in baseboard. Allows easy drape movement because of tapered ends.

HERE'S REAL HELP FOR YOU

Tear Out and Mail Today!



Postage
Will be Paid
by
Addressee

No
Postage Stamp
Necessary
If Mailed in the
United States

Business Reply Card

First Class Permit No. 517, Sec. 34.9, P. L. & R., Waterloo, Iowa

TITUS INC.

P. O. BOX 598

Waterloo, Iowa



KEEP UP TO DATE
WITH NEW 1954 CATALOG
AND MATERIAL

Remember, not until you have a NEW TITUS PERIMETER DIFFUSER CATALOG and a NEW TITUS MODEL HIGH EFFICIENCY DIFFUSER in your hands, can you see the amazing difference between this model and other baseboard units. Comparison will immediately show the unquestioned superiority of Titus units.

SOLVE INSTALLATION
PROBLEMS WITH
NEW INSTALLATION
DESIGN MANUAL

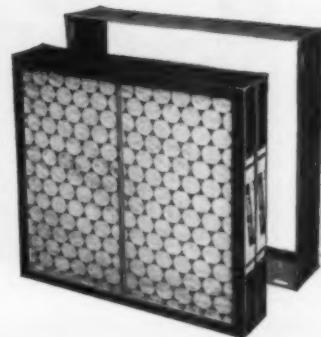
Mail postage paid postcard today for these most important air diffusion developments of 1954.

FREE!

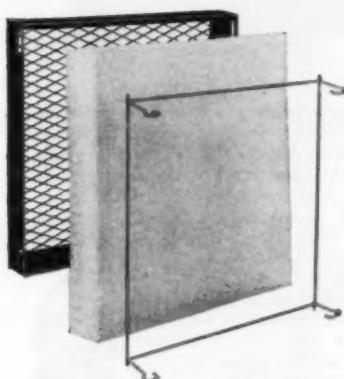
A COMPLETE REFERENCE ON AAF REPLACEABLE MEDIA AIR FILTERS

Here's complete product and engineering data on AAF's three replaceable media air filters. Each is designed for easy, economical maintenance. All feature AMER-glas—the versatile AAF filtering media offering such advantages as high cleaning efficiency; minimum air resistance; low cost; ease of handling and the absence of prickly, irritating slivers.

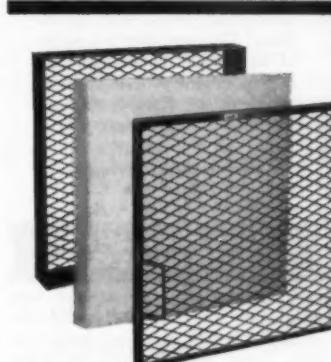
Write for your free copy of this 8-page, illustrated bulletin. It's full of new ideas—sound ideas that can save you money.



AMER-glas—features AMER-glas media in 1" or 2" thicknesses contained in a fibreboard casing between two perforated grilles for sturdy construction and easy handling. Metal frame units are available in four sizes in two nominal depths—2" and 4"—permitting filter cells to be installed in series for improved efficiency.



RENU-glas—a renewable air filter consisting of a metal frame and 2" AMER-glas pad. A spring retainer holds media in the frame, eliminating extra cost of casing to enclose pad. Range of four sizes permits assembly of filters in a bank to utilize practically all of any given space.



RENU-VENT — an efficient, easily maintained filter using AMER-glas pads 3½" in depth as the filtering media. In addition to providing increased filter media, the 3½" AMER-glas pad supplies greatly increased dust holding capacity without increasing the initial resistance proportionately.

American Air Filter

COMPANY, INC.

Louisville 8, Kentucky • American Air Filter of Canada, Ltd., Montreal, P. Q.

American Air Filter Company, Inc., 355 Central Ave., Louisville 8, Ky.
Please forward me copy of your new Bulletin No. 216 describing the AAF line of replaceable media air filters.

Name _____

Company _____

Street _____

City _____ State _____



Mail this coupon.
Now! ➔

"THE TURNOVER TWINS FOR SPRING & SUMMER

That's What Dealers and Wholesalers Call

Viking's

"ARID-ZONE" DEHUMIDIFIER"

BIG "955" FAN...



reports Bill Seibenthaler, friendly
Viking representative of
Shawnee, Kansas



This Seafoam Blue "955" with its convenient Push Buttons exhausts 3500 cubic feet of hot stale air every minute replacing it with cool night breezes that let the whole family sleep cool. And it's Electrically Reversible for cool air circulation during the day.



"Far-sighted Dealers Profited On These Two . . . Smart heating dealers in our territory have long been expanding their lines to include profitable products such as this Viking Big Fan and Dehumidifier. Our dealers prefer the Viking Big Fan because Viking's one model is what the majority of their customers need and buy. The "Arid-Zone" Dehumidifier is a natural since our dealers get into the basement where moisture problems are obvious and can helpfully suggest an "Arid-Zone" as the solution. **That's the story told our representative by James S. Reed of A. Y. McDonald Mfg. Co. in Joplin, Mo.**



Sell this Desert Tan "Arid-Zone" to the customer with moisture problems. It absorbs excess moisture, won't overflow, shuts itself off, flashes a red warning light when full and starts automatically when emptied. Complete with accessories necessary to permit installation of permanent drain. Then light guards against blocking of drain.



For Economical Cooling Viking's Big Fan is Tops . . .

Lots of our customers think a room cooler too expensive for the amount of cooling it does. All they want to do is sleep cool. And this Viking Big Fan lets the whole family do just that for less than \$100. It's got short selling season and produces volume sales for small space and inventory requirements. Good sales in past years have made me a steady customer". So says George Steele of Steele Sheet Metal Works in Joplin, Mo.

VIKING'S 1954 CO-OP KITS— COMPLETE SELLING REPORT

Each Kit contains newspaper ads, radio and television commercials, publicity stories, window streamers, news about displays and available mats for both products. And with both products you receive Vadnits (Viking Advertising Units) worth \$3.00 each on up to 50% of the cost of your local advertising done on either product.

This 'Arid-Zone' is The Answer To Every Customer's Moisture Problem . . .

Most moisture problems are worse in the basement of the house, so we have many opportunities to lead right into a sale. And it's easy to sell the "Arid-Zone" primarily because it's completely automatic and won't overflow like the others. And if the customer wants a permanent drain, Viking includes all the accessories I need to do the job. I always keep an ample inventory on hand. **That enthusiastic reaction from Robert E. Smith of Cotton Smith Plumbing Co. in Neosho, Mo.**



Order Both of These Fast-Selling "Turn-over Twins" Today.

Viking

Air Conditioning

DIVISION OF THE NATIONAL RADIATOR COMPANY
5601 Walworth Ave. Cleveland 2, Ohio



Viking
Blower Packages



Viking
Blower Assemblies



Viking
Humidifiers

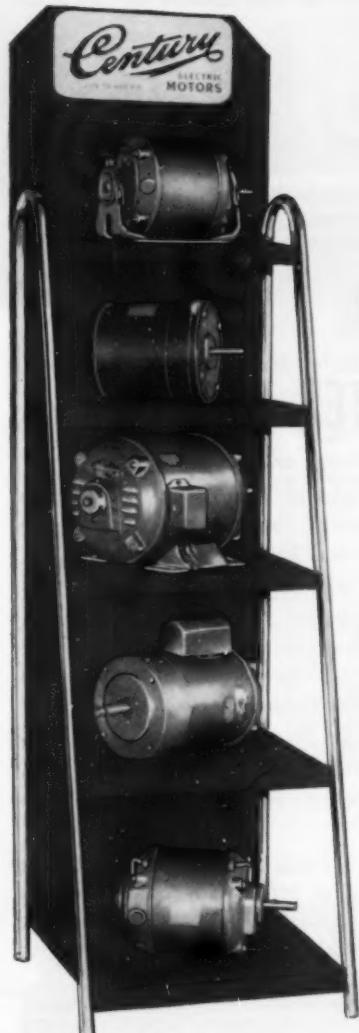
Other Viking
Products
Dehumidifiers
Attic Fans
Window Fans

Now from

Century

TWO EASY WAYS TO GET YOUR SHARE OF PROFITABLE MOTOR REPLACEMENT BUSINESS

SELL MOTORS ON SIGHT
WITH THIS
Century Silent Salesman



Take advantage of the BIG, constantly growing demand for replacement motors with these and other motors from the Century Line.

MAINTAIN YOUR OWN MODEST STOCK OF Century MOTORS FOR RESALE

- Most often, when folks need a replacement motor, they need it QUICK. You can fill that need—and gain their loyalty—by selling them top quality motors from Century's Complete Line.
- A stock of Century Motors prepares you for profitable replacement business with most makes of compressors, oil burners, blowers, unit heaters, pumps, fans, appliances, and scores of other motor-driven products.
- Free, with your order for only ten Century Motors, you get the attractive red and chrome metal display stand shown here. It identifies you as the man to see for replacement motors. You'll show more motors, sell more motors with this display, in just a few square feet of space. Limit of one display stand per customer.

WORK CLOSELY WITH YOUR COOPERATIVE Century SERVICE STATION

- Century's network of service stations is nation-wide. There's one in your vicinity—ready to give you delivery on practically any Century Motor your customers might need.
- Every Century Service Station is staffed by men whose skill you can use to solve your motor service problems . . . men who can help you get more profitable motor replacement business.

CENTURY ELECTRIC COMPANY St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

**GET ALL THE DETAILS
of the CENTURY
Motor Selling Plan**

...MAIL THIS COUPON TODAY!



EST

CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri

I want all the facts about Century's motor replacement selling plan.

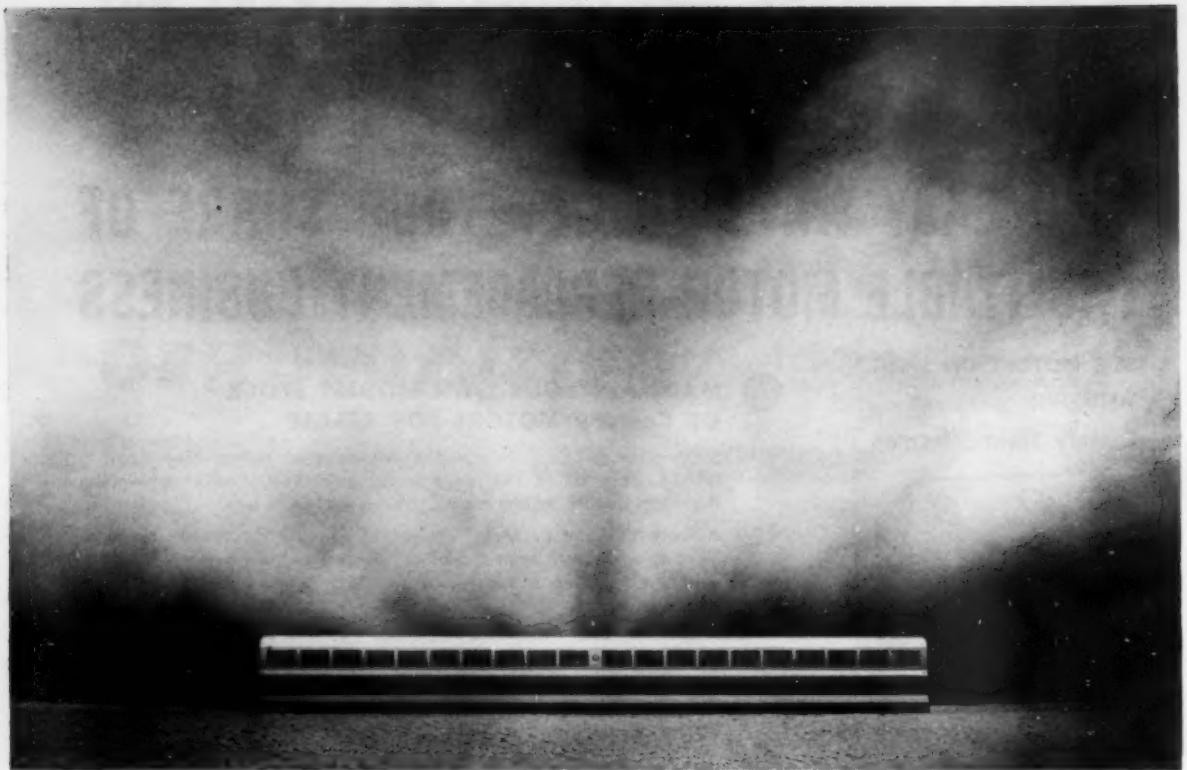
Name.....

Company.....

Address.....

City.....

Zone..... State.....



BETTER—all around

**new Lima Extended Baseboard
PERIMETER DIFFUSER**

for heating and cooling



Exclusive Lima mechanical damper is built-in—saves time and labor. Spring-loaded, hinged damper runs full length of louver openings. Permits full air shut-off. Set screw adjustment at face simplifies balancing and eliminates quadrant dampers. Face, including built-in mechanical damper, is easily removed.

Immediate delivery in standard four foot and two foot sizes. See your local Lima jobber or write for literature and prices.

Check this new Lima baseboard diffuser for performance and beauty... design and construction... versatility and ease of installation. You'll see why it is better—all around.

More Comfort Everywhere In The Room. This new Lima unit spreads a full fan-shaped blanket of air upward and outward, inducing re-circulation of air within the room. Four rows of louvers assure efficient diffusion at proper angles for complete comfort. *Equally efficient for heating and cooling.*

Better Looking From Every Angle. Attractive design and smart style lines harmonize beautifully with any baseboard. Lima medium beige lasting finish does not need to be repainted unless desired.

Easier To Install In New And Old Houses. Unit is designed so it can be installed against studdings before lath and plaster are applied, leaving little or no protrusion beyond baseboard. In old houses, unit can be butted up against baseboard or wall.

Special joining connector permits the use of any multiples required for continuous installations as shown above.

sold exclusively through heating wholesalers and manufacturers



Lima

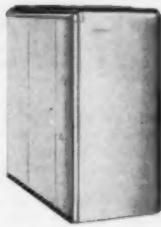
register company

LIMA, OHIO

Luxaire

OIL FIRED UNITS

for the SMALL home
at sensationally LOW PRICES!



Basement A.C. Unit No. 0-71
with hinged vestibule door.
71,000 Btu at Register.



Utility Unit No. OH-85-E
84,000 Btu Output



Basement A.C. Unit with
Burner exposed No. 0-71-E
71,000 Btu at Register.



Counterflow Unit
No. OHC-85-E
84,000 Btu output

CASING DIMENSIONS

UTILITY UNITS 20" WIDE x 20" LONG
COUNTERFLOW UNITS ONLY 20" W. x 20" L.
WINTER A.C. UNITS 20" W. x 36" L.

COMPACT!

HIGH QUALITY!

HIGH
PERFORMANCE!

QUIET
OIL BURNER

You will be ahead of competition — You can get the order for small home installations with Luxaire's newly developed, gun-type oil burning units, especially designed for the small home . . . with Units at the price that lands the order . . . Units that require a minimum of installation space . . . Units that are quick and simple to install . . . Units that are easier to sell, than to compete against!

All units are equipped with Luxaire oil burners with non-clogging burner nozzle which provides clean, efficient combustion with catalytic cracked heating oils. Ruggedly constructed steel heating elements are welded leak-proof and gas tight. The smartly styled, rigidly constructed cabinet has two tone baked enamel finish. Units are factory assembled for easy handling and quick installation.

See your Luxaire jobber today — get the extremely competitive prices on these new sales-producing oil burning furnaces for SMALL homes.

CONVERT TO GAS ANYTIME . . . SIMPLY CHANGE BURNERS.

THE C. A. OLSEN MANUFACTURING COMPANY . . . ELYRIA, OHIO

Luxaire

HEATING & AIR CONDITIONING UNITS

ANNOUNCING **No. 1000 BASE DIFFUSER**
(STRIP BASE REGISTER)



**The answer to your problem of
PERIMETER REGISTER
SELECTION**



**IT HAS
EVERYTHING!**

COMPLETE WITH BALANCING DAMPER Covering entire Length of Diffuser — with Set-Lock (A Patented Feature) for System Balancing at the Diffuser — which makes Basement Dampers unnecessary. May be installed, on New Work, against the Studding or against Lath before Plastering — or against Wall after Plaster is applied. May be installed on old house work against Wall or Baseboard.

Outlet Grille Openings Prevent any object being deposited inside of Outlet Assembly is made by snapping front into Top and attaching at Bottom with Screws. Secure and Speedy Assembly. Damper is Lever-Operated and Set-Locking is done with Narrow Screw Driver. Damper may be closed at will but may be opened only to position governed by the Setting of the Set-Lock.

The No. 1000 U. S. BASE DIFFUSER will be Furnished in TWO-FOOT SIZE (Complete with Set-Lock Damper) — the No. 1024. The FOUR-FOOT SIZE (Complete with Set-Lock Damper) — the No. 1048. The EIGHT-FOOT SIZE (Complete with Two Set-Lock Dampers) — the No. 1096.

All No. 1000 DIFFUSERS HAVE BOTTOM BOOT OPENINGS $2\frac{1}{4}$ inches DEEP with Patented Adjustment Plates to make any desired Length and to adjust to avoid joists. GREATEST TIME SAVER.

The ART BUFF Finish Blends with most Interior Color Schemes and is also a Very Practical Prime Coat.

Sizes Longer than No. 1096 (8 Foot) may be had by Connecting 2 Foot and 4 Foot Sections together with Connectors (of course removing end Caps at connecting ends to make desired Length).

Adjustable boot Openings are Furnished on 2 Foot and 4 Foot Sizes. Eight Foot Length would have 2 boot opening, etc. A boot opening with Slide adjustment in each component section would be available.

Showing an Actual Installation
of the No. 1048 U. S. BASE
DIFFUSER



WRITE for complete folder covering INSTALLATION, ENGINEERING DATA, and PRICES —
Watch for coming important announcements.



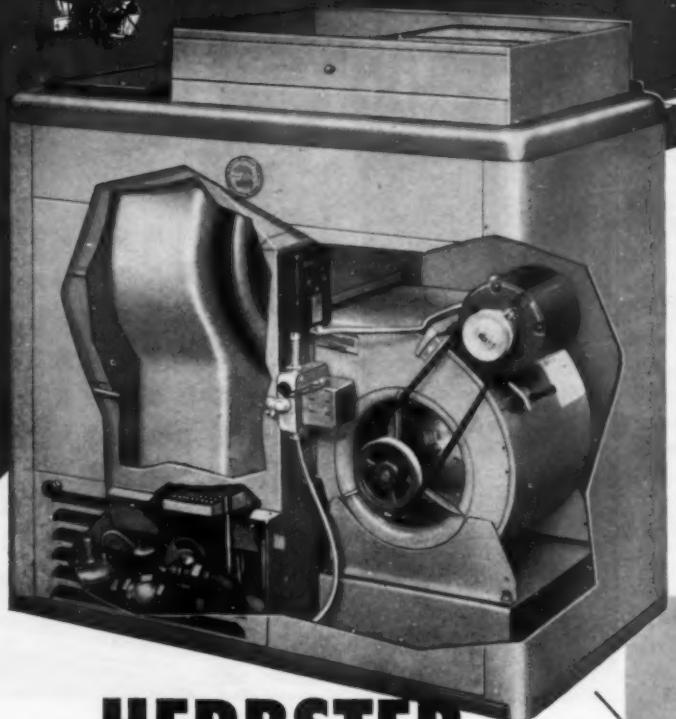
UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN

MINNEAPOLIS • KANSAS CITY • ALBANY

SOLD BY LEADING JOBBERS FROM COAST TO COAST

The Greatest HEATING SALES IDEA since the Base-Burner!

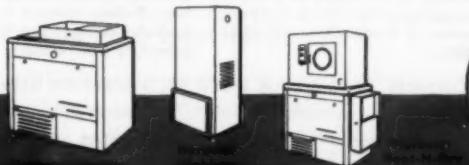


Guaranteed for 25 years



HERBSTER Automatic Gas-Fired Forced Air HEATING UNITS

It's a heating engineering miracle from the Herbster laboratories! The amazing TORCON Heat Exchanger, exclusive with Herbster furnaces, permits dealers to sell a furnace with a cast iron heat exchanger *at the same price* as with a steel heat exchanger. But that's not all! The patented concentric venturi design has more square feet of radiation in a given space than any other unit. Sell the best *for less*. More efficiency — greater economy. Sell Herbster Lowboy, Highboy and Heat-N-Dry furnaces with the fabulous Torcon.



with the sensational **TORCON** patented cast-iron concentric venturi design **HEAT EXCHANGER**

- Cast iron . . . can't rust out, burn out or wear out
- Concentric venturi design . . . the most efficient ever developed
- More square feet of radiation
- Easy to install — weighs only 130 pounds
- One piece construction . . . absolutely silent
- Guaranteed 25 years

FREE — Mail coupon for details on the Herbster Dealer Sales Plan today.

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Gentlemen: Please send without obligation further details on Herbster Gas Furnaces.

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"UNI-FLO" ENGINEERED

Air Distribution

**removable cores simplify installation of air diffusers
in home office building of DUN & BRADSTREET, INC.**

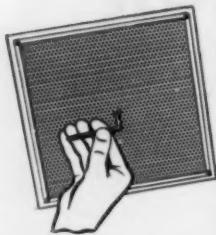
Noteworthy edifice in downtown New York City is this progressive, functional office building at 90 Church Street . . . home of Dun & Bradstreet, Inc. Several years in the planning stages, the resulting structure is complete with the most modern equipment for efficient operation.

Seven hundred and sixty-nine Uni-Flo Air Diffusers contribute to the comfort of occupants. Easily adjustable to set up air patterns conforming with the building design and needs of the workers, the Barber-Colman equipment brings fresh conditioned air to all offices with minimum noise and maximum efficiency.

Removable cores in sidewall diffusers, plus simple mounting of ceiling diffusers, saved time and effort for the installing contractor. The usual plaster frames were omitted, yet there was no cracked plaster on the job to be patched and repainted.

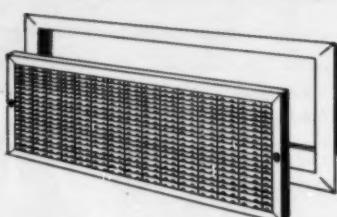
As a protection for huge investments in air conditioning equipment, more and more owners, architects, engineers, and contractors are specifying the best in air distribution equipment to insure highest efficiency of the entire system. More and more are coming to Barber-Colman Company. Let us show you why.

Square ceiling diffusers are adjustable



Unusually flexible to meet job conditions is this modern Uni-Flo Square Ceiling Diffuser which can be adjusted after installation to provide air deflection from vertical to horizontal and discharge air patterns in one to four directions. Attached to the standard T-bar construction of acoustical ceilings, it harmonizes perfectly with latest ceiling designs. Get Bulletin F-4728-1.

Removable cores also facilitate cleaning of ducts and grilles



Plaster and wall decorations are safe from damage when installing, adjusting, or cleaning Uni-Flo Sidewall Diffusers. Complete core slips in or out with ease—frame has continuous sponge rubber gasket to minimize leakage. 1" lap on frame covers irregularities. Get Bulletin F-1415-10.



Home office building of Dun & Bradstreet, Inc., 90 Church Street, New York City. Uni-Flo air distribution equipment is installed in office areas from second through eleventh floors. Architects: Reinhard, Hofmeister and Walquist. Consulting Engineers: Syska & Hennessy, Inc. Air Conditioning Contractor: Kerby Saunders, Inc.



Uni-Flo Sidewall Diffusers in soffit provide a draft-free, comfortable atmosphere for office workers. Soundly engineered system is easily balanced, quiet and efficient in operation.



Uni-Flo Square Ceiling Return Grilles mounted in between fluorescent lights, blend gracefully with ceiling.

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Air Distribution Products • Automatic Controls • Industrial Instruments
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Arnold Kruckman's
Washington Letter

Revise Standards for FHA Insurable Heating and Cooling Equipment

FHA, AND OTHER related agencies, have had a number of conferences with the heating equipment and air conditioning equipment industries. They have sought to work out a way to make outstanding changes in the heating requirements in homes to be insured under FHA plans. This has led to two different revisions of the existing standards — in relation to heating requirements and in regard to contemplated changes in ME-10 (cooling standards). The second, final revision of these standards probably will have been published and distributed to the industry by the end of April.

Neither the industry nor government officials anticipate that even the second draft will produce any major changes. Apparently the fundamental operation under the standards will remain about the same. Two of the chief sections will be combined in the revision which will have been published by about April 30th. We are told there will be considerable condensation in the new report.

Apparently most of the debate over heating equipment has been about boilers sold without radiators. It is pointed out that there is no great difficulty in accepting such equipment together with boilers, but that there is great difficulty in adjusting the transactions that omit the radiators. They tell us here that the conditions and standards set up by banks and other lending agencies in many parts of the country differ; it appears to be difficult for the federal government to adjust its own standards to the local yardstick. While the federal people are not inclined to give way on the fundamentals involved, they appear to be eager to meet the widely divergent views and demands of local custom and practice.

Cooling Units Insurable Locally

ME-10, as it is known, covers cooling requirements, air conditioning combinations, summer air conditioners and similar equipment. Cooling standards are not properly reflected in the suggested local FHA standards. They

require a separate book. FHA people reiterate that the whole gamut of cooling requirements is a new industry to FHA and it is difficult to include in the real estate classification.

Window air conditioners, which have always been cause for debate between the public housing insurance people and the industry, are still not accepted as real estate unless they can be demonstrably shown to be part of a real estate program. Again, it is pointed out that window conditioner free-standing units differ widely according to various local area standards. Apparently the revision of the standards still does not place the window air conditioners or the console type in the accepted classification under federal insurance definition. The debate seems to be how the free-standing unit or the window air conditioner can be made a part of real estate. The government seems to have gone a little further than it went in previous definitions. It is now willing, generally, to accept the window air conditioner as coming within the insurable types if it is placed in a hole or an opening that is made in the wall under the window, or elsewhere in the room.

Even with the acceptance of the window air conditioner and the free-standing type under different local conditions, government people emphasize that it should be understood that window air conditioners and free-standing equipment are not generally accepted by the federal government as coming under types that are insurable as part of a housing operation or program.

The entire picture in regard to insurable heating equipment and cooling and air conditioning equipment that may be insured will be far clearer and more definite after the new revision has been distributed on or about April 30th. The distribution will be restricted to the industry and to those who have a genuine right to the information. You will probably be able to get a copy of either revision, if it is not otherwise available to you, by writing to this correspondent at the offices of the American Artisan in Chicago.



Washington Letter

FHA Loans Being Investigated

As of this writing, it looks as though some changes will be made in the "lease-purchase bill" for the construction of public buildings, as a result of the Congressional inquiry into FHA home improvement loans and government-insured loans for large housing projects—an inquiry announced by the White House last month.

Albert M. Cole, HHFA administrator, was authorized to seize FHA files. He cited to the press possible negligence in two main categories. First, he said that in 251 cases, builders got loans in excess of cost of multiple family projects, under Section 608 of the National Housing Act (a section that expired in 1950.) About \$75 million was involved, Mr. Cole said, citing as one example a builder who received loans in excess of \$8 million for a project costing somewhat over \$3 million. Mr. Cole cited as the main question "whether the appraisers were guilty of gross negligence or collusion."

Second, "high pressure" home improvement salesmen have over-charged home owners or persuaded them to make unnecessary changes, he said, under Title I provisions. As an example, Mr. Cole cited one housewife who had been persuaded to install a fire alarm system in her small home and had been charged twice what the system was worth. He said that teams of these "dynamiter" salesmen went from city to city to "work the area."

Congressional leaders have now appealed to the FBI for help in investigating the FHA loans. The Internal Revenue Service has stated that investigations will affect 1149 building corporations in 26 states and Hawaii. Senator Capehart's committee (Senate Banking Committee) has a very substantial appropriation for its investigation.

Booklet Explains Latest on Title I

Federal agencies often issue pamphlets and other publications intended to bring the business man up to date about the latest interpretation of and amendments in the various laws designed for the benefit of their industries or services. Recently the Federal Housing Administration assembled for publication all the data and the regulations, including all amendments, to Title I, together with a statement of their effect in the use of the property improvement loan.

This latest pamphlet, bearing the code FH-20, tells about the qualifications of a contract of insurance; how such a contract can be terminated; what insurance protection is afforded by the various government offers;

and the cost of such insurance. The carefully written booklet covers the lending "area" (where the loans may be made under certain insurance conditions) and gives a loan chart, financing charts, and a number of factor tables. The above terms are thoroughly clarified in the pamphlet. Under administrative policy the FHA piece supplies information about the pre-payment rebate, about re-financing, about credits as they apply to the housing and property improvement undertakings. There is a discussion about collections, about eligible improvements, and about prior liens and their effects, as well as supplemental costs and dealer relationships and how the proceeds of a loan are disbursed under the supervision of the government. There is also information on how those who engage in property improvements may make a claim for loss.

Under the section that is devoted to regulations, there are some very clear and sharp definitions of the meanings of the various terms relevant to Title I loans. An understanding of these terms is a "must" for the business man who operates under Title I and uses property improvement loans. There is also a very useful discussion of notes and why a note is eligible or not eligible under certain circumstances. Also discussed are how notes must be handled and their significance to the business man in his relation with the government and the bank or the lending institutions with which he does business — as well as with his customers. You will find a discussion about the significance of the maximum amount of loans, under the various classifications of a loan as given in the pamphlet; and there is a very lucid discussion of the financing charges which often fall disturbingly upon those involved in such transaction. There is an explanation of how to make an application for credit, and how such an application for credit is investigated.

Tells How Dealer Is Approved

An explanation is given of the kind and the type of technical services that come under the loan and what direct cost is allied to this kind of loan. One of the most important paragraphs reveals the method by which the dealer must be approved, and how the dealer must satisfy the commissioner as well as the bank and the lending agency of his eligibility. It is brought out that it is necessary to obtain a copy of the contract or sales agreement, which must be signed by the borrower and the dealer, and it is impressed upon the business man that he must thoroughly understand the type and the extent of the improvement to be made and the materials



The reason for the remarkable workability of Wheeling SofTite is that it is ductile and tight coated to a most amazing degree. As a result, it forms freely and easily, with no strains in the zinc coating, no chipping or flaking of coating.

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WASHINGTON LETTER —

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METAL MANUFACTURING DIVISION, EVANSVILLE, IND.**

to be used. The whole method is highly systematized. It is even provided that if the dealer has not been approved, the proceeds of the loan may not be disbursed for any purpose until all the requirements in the regulations of Title I have been met.

There are special provisions to meet the needs of refinancing. These are broken down into various classifications. The discussion includes rebates and deferred payments, and it demonstrates how loans must be reported to the Federal Housing Administration in Washington on certain prescribed forms. The regulations provide for the various phases of claims and how they must be handled, the requirements extending even to court costs and to the restrictions and limitations that are set upon attorney's fees. An outline gives the method of the assignment of notes and other appropriate documents.

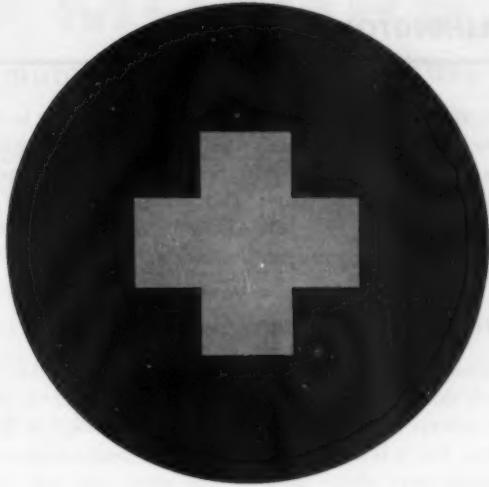
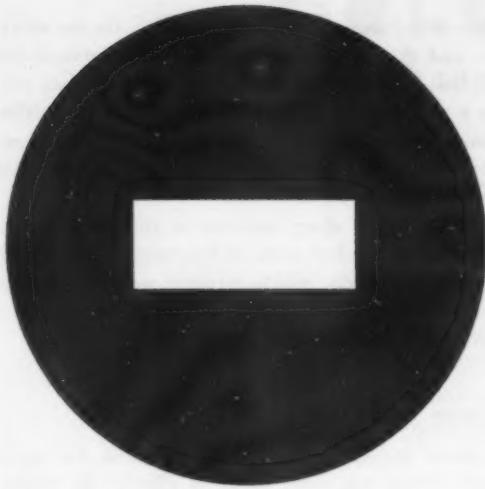
The amended regulations cover reimbursement consistent with general insurance reserves and provide for relief under the regulations as they were set up during the various periods during the existence of the FHA Title I. The insurance rates are set forth definitely and exactly, with such modifications, under specific instances, as may seem appropriate to the commissioner of the FHA. The regulations set up a number of safeguards for the government and other methods of protection for the insured and for those with whom the government or the insurance client does business. The tables, the forms, the many valuable facts in the pamphlet make it a very useful book to have in one's business library.

This booklet, No. FH-20, *Property Improvement Loans Under Title I of the National Housing Act. Regulations Governing Class I and II Loans Effective July 1, 1947, Including All Amendments to December 18, 1953*, may be obtained from FHA Field offices or by writing to the Federal Housing Administration, Washington 25, D.C.

Thulman Leaves Government Work

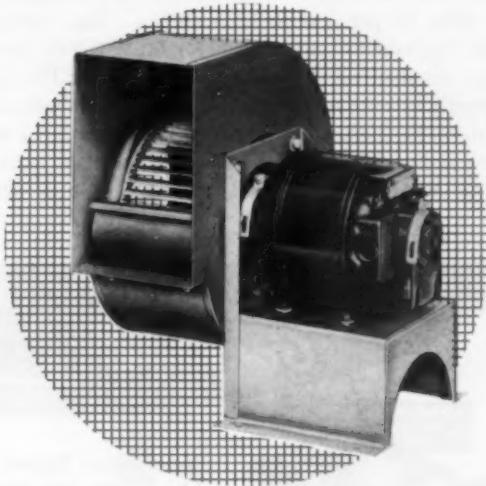
Robert K. Thulman — just about everybody in the heating and cooling industry has known him as a substantial member of the personnel of the federal government — has resigned. Mr. Thulman had been either in the FHA or in the HHFA, or in some allied housing agency, for almost all of the past 19 years. He was a specialist in solving many of the problems that have come up since public housing and housing supported by government insurance and financing became an important part of the national economy.

Mr. Thulman left his post recently when the reorganization of government caused the shrinkage of many parts of the housing agencies. One's sympathy normally goes along with the government in reducing payrolls and reducing the number of bureaucrats. It seems to this reporter, however, that Mr. Thulman could have been of

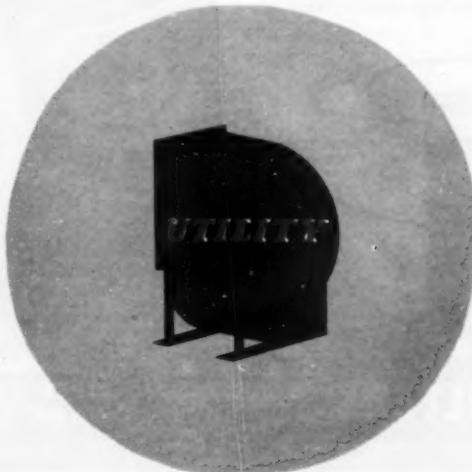


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NAFM

WASHINGTON LETTER —

great value to the nation as long as public housing is one of its activities. There is no objection to the reduction of bureaucracy; but it does seem as though there is some waste in eliminating those who are highly trained in the jobs they have long held where the training they have received is valuable to both industry and government.

Shifts in New Construction Spending

Combined government agencies announced late in March that new construction, financed wholly or in part with federal funds, dropped 40 per cent in 1953 to \$2.8 billion. But it is stressed that the federal contract awards, however, were above those of any other post war year except the active defense years of 1951 and 1952.

The largest part of the decrease of \$1.9 billion over the previous year was in federal-financed industrial plants and military facilities. Industrial building dropped by more than 50 per cent to \$603 million. This reflected chiefly the reduced commitments for expansion of atomic energy installations. Military construction in 1953 fell off chiefly because of decreased contracts for warehouses and troop housing, which together accounted for a half billion dollar decline. It is interesting, also, to note that the government built \$132 million less in hospitals

than it did during the previous year. On the other hand — and this is very significant — educational building awards increased during the year by more than one third to a new high of \$172 million. It will be recalled that many people object to government in education, that some states and localities wish to carry on education programs entirely on their own.

There was a sharp increase in construction contracts awarded in the last week of February and a definite rise in housing starts, which recently were adjusted to the annual rate of nearly 1.2 million units — just about even with the figures of a year ago.

Excise Taxes Cut

Early in April the President signed the excise tax bill. There was some question whether he might balk. In general, the Senate concurred in the House provision which dropped to 10 per cent all rates presently above that level as of April 1, 1954. Imposts above 10 per cent were retained on dues, initiation fees, cabarets and fire arms. On the other hand, tickets of admission to high school and college athletic events, museum tickets and theater tickets priced under 60 cents were exempted completely from excise taxes. Household appliance taxes also were reduced from 10 to 5 per cent. All taxes on liquor, tobacco, gasoline and automobiles were continued after April 1.

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Veteran oil burner servicemen call General Fuel Oil Filters "the best money can buy." Two-fold, positive filtering removes the finest particles, improves operation of oil-fired furnaces, water heaters, space heaters. Service "call-backs" are eliminated, too, since the General 1A-25 and 2A-700 allow only clean oils to pass—greatly reducing possibilities of clogged burner nozzles.

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Hi-Furnaces, Lo-Furnaces, Counter-Flo Furnaces,
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Short On Prospects? Store displays, merchandising helps, direct mail promotions bring more prospects through your door.

Price Cutting? Mister, they can't touch you!
Only Authorized Dealers handle Timken Silent Automatic.

Inadequate Advertising? Cash in on the strongest factory campaign in the business. *Plus* liberal Cost Sharing Plan for local advertising impact.

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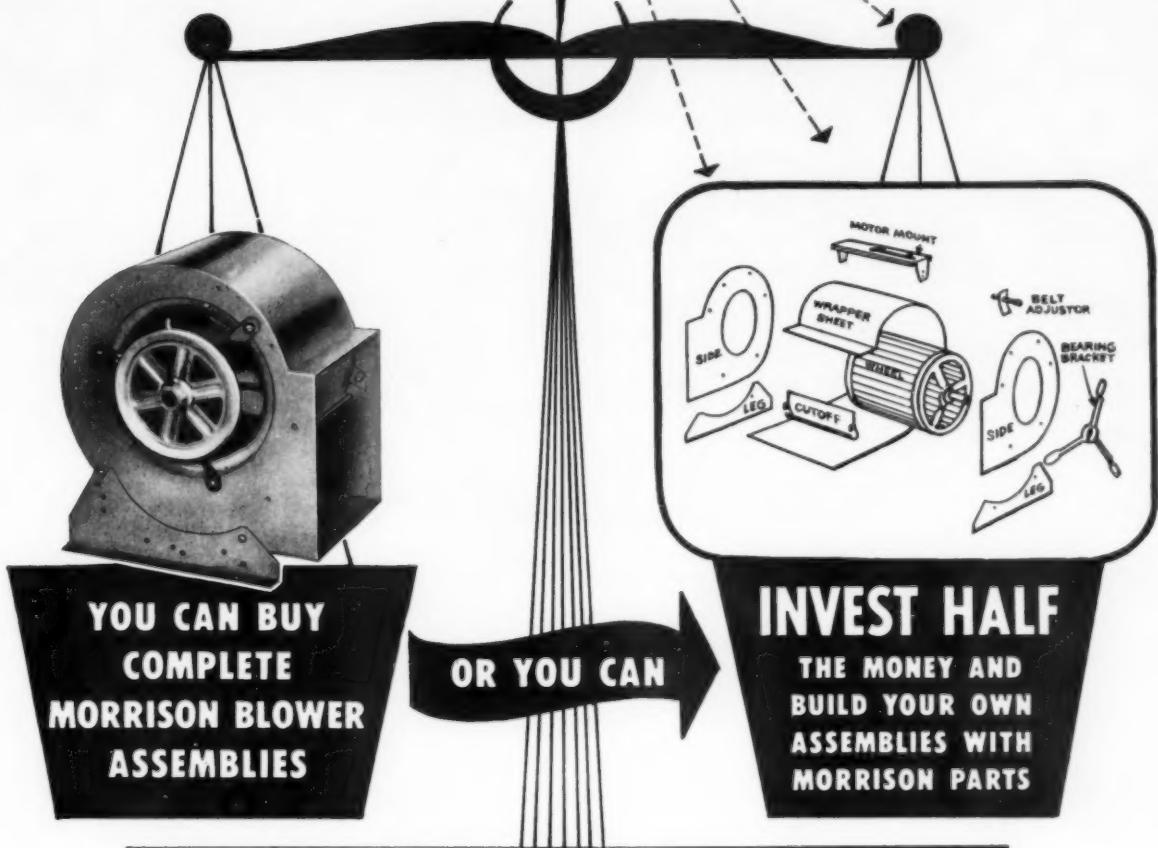
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"MORE TO SELL . . . and MORE TO HELP YOU SELL"

As a Lennox dealer you are a partner in one of the most successful organizations in heating and air conditioning history. You have more equipment to sell, and more to help you sell it. You enjoy direct contact with the manufacturer. This means you receive constant help in such important parts of your operation as sales, engineering, servicing . . . pricing, financing, bookkeeping. In fact, every phase of your business is more profitable when you handle the Lennox line.



MORE profitable sales-building tools

When you carry the Lennox line, you have a complete line of profitable sales-building tools available at cost. Dealer identification for shop, trucks, jobs, men; beautiful sales literature; customer prize plans; packaged, proven sales programs all worked out for you—such as cleaning campaigns, service policies, "Do-It-Yourself," live demonstrations on heating and air cooling equipment; even display booth material for fairs and home shows. Your Lennox salesman shows you profitable ways to use these tools to get more prospects and close more sales. *More profits for you.*

MORE complete line of heating and air conditioning equipment

Lennox dealers go after more heating and air conditioning jobs because they have a more complete line of practical sizes and models for every type of installation and for all fuels. With new Lennox air conditioning equipment they are stepping right into this big profitable market. Quantity discounts and inventory incentives mean *more profits for you.*



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MORE sales and service training

At factory and field sales schools, Lennox dealers get personal training in all phases of good business practices, profitable prospecting and proven sales-closing methods. Lennox factory and field service schools provide elementary, intermediate and advanced courses to give your servicemen practical training in heating and air conditioning. *More profits for you.*



MORE national advertising and local dealer "tie-ins"

With the Lennox line you don't have to sell the "make" before you make the sale. Lennox dealers are backed by national advertising to consumers, architects and builders. For a profitable "tie-in" in your area, you have a wide choice of superior local advertising material—newspaper mats, radio and TV spots, direct mail. *More profits for you.*



MORE real engineering helps

As a Lennox dealer you have a "branch engineering department". The Lennox Plan Service Department gives free engineering assistance on special heating and cooling layouts and "problem" jobs. In addition, your Lennox representative is always on call with an expert helping hand. You deal directly with the factory—without red tape or delay. *More profits for you.*



MORE business helps

Lennox goes "all the way" to make sure you are operating on a sound and profitable basis. Working closely with you in the management of your business, the Lennox organization furnishes pertinent business information, bookkeeping helps, pricing formulas, and even goes so far as to assist in the financing of your purchases and sales. *More profits for you.*



MORE protected dealership benefits

With the Lennox agency you cash in on a personal factory-dealer relationship that has been successful. You build up your business through the popular Lennox name and get all the benefits of your own dealer tie-in promotion. Because Lennox "lives with its dealers" you get constant cooperation and help in every phase of your business. *You reap the reward of having more to sell and more to help you sell with the Lennox line.*



If you are a Lennox dealer now, you know that the above statements are true—or more accurately, understatements of the facts.

If You Are Not A Lennox Dealer—why not get the complete Lennox Dealer Story now. There's no obligation, and a Lennox dealership may be available in your territory. So write or wire the Lennox office nearest you for full details about the security and stability, and the pleasures and profits of a Lennox dealership.



in warm air heating . . . more families buy **Lennox** than any other make!



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Salt Lake City, Utah
Decatur, Georgia
In Canada: Toronto and Calgary

What are you getting for your steel dollar?



In quality of product

- steel of known, uniform quality which you can reorder with confidence
- steel accurate as to size and gauge
- steel carefully stored and handled so it reaches you in prime condition
- assurance of correct weight



In value of service

- clean, accurate cutting, eliminating need for further processing
- constructive advice on steel problems
- quick delivery—within hours when needed



In character of supplier

- wide range of steels with quantity differential economies
- fair prices in times of scarce or plentiful supply
- unprocessed material returnable
- settlement of differences to your complete satisfaction
- the interest and ability to carry you in times of difficulty

Only if your steel dollars buy a *complete* steel service will your dollars return full value. We have been serving industry with good sound steel from stock for over one hundred years. We stand ready to work with you whenever you call.

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AMERICAN ARTISAN

"Why Stop Neatness at the Sales Level?"

A WARM AIR HEATING and residential air conditioning dealer — who has gained a statewide reputation because his business has expanded so much and so rapidly — recently told the American Artisan that he attributes much of this expansion to the neat appearance of his employees, both in the sales and service departments.

It is an accepted fact, he said, that a neat appearance is essential to the success of a salesman — that prospective customers consider his neatness to be an indication of the type of work the dealer will do for them. But he added, "Aren't all of your employees company salesmen? Then why stop neatness at the sales level?" He went on to explain that anything done to improve the appearance of everybody and everything connected with the business becomes an advertisement of the type of work that can be expected from the company.

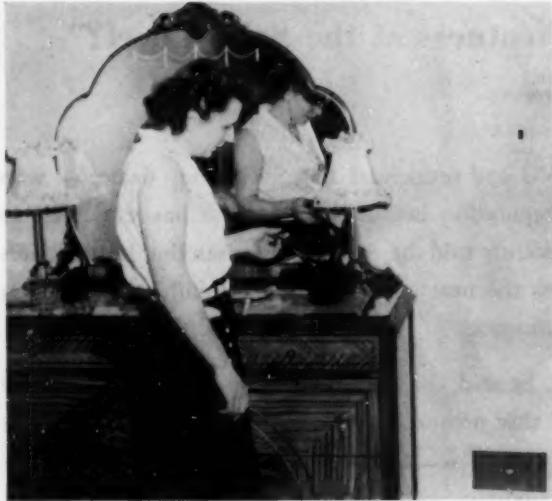
This dealer provides his service, installation and shop crews with uniforms consisting of shirts, pants and jackets. The company's name, lettered on the back of the shirts and jackets, tells the public that these neat employees are connected with this particular heating and cooling firm.

The uniforms are provided free of charge to the employee and are supplied freshly laundered each week. Each employee has three sets of uniforms — one to wear, one in the laundry and a third in the stockroom. The spare uniform is intended to make it possible for the employee to change clothes any time he has performed an unusually dirty job, thus assuring the clean appearance so essential to good advertising.

All equipment used at the job site is periodically washed with soap and water and repainted whenever necessary. The trucks are washed each week by a service station.

Nothing is allowed to detract from the general cleanliness essential to winning complete customer confidence for this firm — which believes its best advertisements are worn by its own employees.

How Home Owners



"DUSTING is kept to a minimum."



"CARD GAMES with the neighbors are 'less heated' during the summer."



"T.V. PROGRAMS are more enjoyable."

People who live in air conditioned homes are enthusiastic about summer cooling, and are pleased with their installations. Their comments — obtained exclusively by the American Artisan — provide excellent sales ammunition for warm air heating and residential air conditioning dealers

WHO IS IN better position to tell the prospective purchaser about an air conditioning system for his home than someone already enjoying its benefits?

To explain to possible buyers of home cooling installations the advantages — and any disadvantages — of summer air conditioning, the American Artisan has interviewed by mail a number of people who have been living with it. Their comments comprise valuable sales ammunition for warm air heating and residential air conditioning dealers.

The names of owners of air conditioned homes — both new and old houses — were obtained from Artisan subscribers who installed the equipment. The people interviewed represent a geographical cross section — they live in Toledo, Dayton and Canton; Indianapolis; Fort Worth; St. Louis and Kansas City; Wichita; Moline, Evanston and Chicago. They own homes valued from \$12,000 upward and the equipment installed ranges in capacity from 2 to 10 tons of cooling.

They Like It!

Here are some of their comments:

"Anyone building or buying a house should have air conditioning installed. We like it very much." — Evanston.

"Wouldn't be without it." — Chicago.

"Summer air conditioning, to me, is just as important as heating from a comfort standpoint. I doubt if you'll be able to sell a house in many places in this country

Like Air Conditioning

10 years from now if it isn't completely air conditioned." — Moline.

"In order to be comfortable and with good air in a home, according to our climate needs here, it is quite necessary to have complete year 'round air conditioning. The cost of operating is not bad, since we dispose of the surplus water by spraying it over our lawn during the morning and late afternoon." — Kansas City.

"After one summer with air conditioning, we have decided that it is as essential as heating, and that it is no longer to be considered a luxury but rather a necessity." — St. Louis.

"We are obtaining more cooling out of our 3 ton unit than the dealer thought we would. With outside temperatures from 101 to 105 F we keep the house close to 80 F." — Kansas City.

"It's worth every penny it costs. Instead of feeling 'all in,' we felt energetic all day." — Fort Worth.

"We have had a lot of company at our home and they say it is wonderful, and wished that they had it in their homes, too." — Indianapolis.

"During the peak heat of summer, our house was extremely comfortable." — Canton.

"My air conditioning has been very satisfactory in every way." — Dayton.

"My wife is asthmatic and obtained considerable relief due to the ability of the air conditioner to reduce the pollen count of the conditioned air. The conditioner made it possible for us to keep the doors and windows closed all the time." — Dayton.

Lives Up To Expectations

Each interview was restricted to non-technical questions. The questions and their tabulated findings are:

1. Did the cooling equipment provide the comfort you expected during the summer? — 97.2 per cent answered yes.

2. Were the costs of operating the equipment about what you expected, or were they higher or lower? — 51 per cent answered *as expected*; 33 per cent answered *higher*; 10 per cent, *lower*; and 6 per cent, *have not checked*.

3. If you were building a new home would you insist that air conditioning be included in the original plans? — 100 per cent answered yes.

4. Do you recommend to your friends that they should



"OPERATING COSTS are as expected and not excessive."



"I TELL my friends that air conditioning is well worth its cost."

also have their homes air conditioned? — 100 per cent answered yes.

Cleanliness Rates High

It was interesting to note — in the answers to another of the questions — the great importance given to cleanliness. Clean air would seem to be almost as important to home owners as cool air. To answer the question, "Do you find that air conditioning provides advantages other than comfort?", these comments were made:

"Dustproof air."
"Cleanliness control."
"Cleaner house."
"Far less dust on the furniture."
"House stayed cleaner."
"Dust-free, pollen-free house."
"The house stayed practically dust-free."
"House cleaning easier."
"Less dirt and dust."
"Makes housework easier."
"Eliminates dust to a great extent."
"No dust in the home."
"Keeps dust out of the house, consequently keeping the house and furnishings cleaner."
"Eliminates outside dirt and dust."

Practically every person interviewed made some comment similar to the samples above — all pointing to the money and work savings made possible by reduced decorating costs and house cleaning bills.

Many answerers volunteered that moisture control was an important factor — that people like living in a "dry house" during the summer. Other comments included:

"Better health."
"Enjoyed company more often."
"TV was wonderful."
"Mealtimes were a real pleasure."
"It made summer entertaining much more pleasant."
"Summer sleeping was better."
"Don't have to worry about the windows being closed when we are away for the day."
"Flowers grow better inside the house during the summer."
"Better health — more rest."
"Keeps outside noises outside."
"Able to hold sales meetings at home, when it was too hot to use the office."

Satisfied With Equipment

Another question asked was "Has the equipment been unsatisfactory in any way?" The answers were 80 per cent no. The 20 per cent that answered yes based their remarks upon some of the following general causes for service:

"Noisy."
"Water valve stuck open."
"Thermostat failed to respond to house temperatures."
"Original wiring was incorrect."

"Water pressure in suburb was inadequate."

"Minor adjustments were necessary."

"Controls had to be replaced."

"Refrigerant leaked out."

"Did not cool to 80 F on maximum temperature days."

All of the above causes for service (with the exception of the last) were reported as corrected within a short time after the complaint had been telephoned to the dealer who made the installation, and equipment was reported as now working satisfactorily.

The last cause was evidently due to poor estimating that resulted in undersized equipment, and to date nothing has been worked out between the customer and the dealer relative to installing a larger unit.

Suggestions for Improvements

Some unsolicited comments were:

"Units should include provisions for drying the air without cooling it during spring and fall days."

"It should be possible to have the air moving continuously, whether the cooling unit is operating or not."

"The cost is higher if you let it run day and night, but if you let it run only from early morning until bedtime, we find the cost to be about as expected."

"Our system takes air from the basement and it is possible that something will have to be developed to purify the old air that is used because it seems that odors from cigarettes, food and the like permeate the air."

"How can stuffiness at night (when conditioner is off) be avoided without leaving the blower on constantly?"

"Estimators should be careful when equipment selection is on the margin. I wish I had the next larger size unit."

You've seen what a cross section of the customers are saying about air conditioning — how they like it, what they are telling their friends about it, the kind of trouble they have encountered, and what they want from summer cooling. The facts presented here can be skillfully used by the aggressive dealer to build better customer relations and to talk to prospective customers about how other home owners feel about their air conditioned homes.

URGES 2 MILLION HOMES PER YEAR

R. G. HUGHES, president of the National Association of Home Builders, recently told the House banking and currency committee that the administration's proposed housing bill could put 8 million persons into better homes each year for the next decade. "If this bill is amended and strengthened to meet the needs of middle and low income families," he said, "our industry stands ready to produce an average of 2 million new and 'new-conditioned' homes annually for the next 10 years. Based on the size of present-day families in the housing market, now averaging about four persons to the family, such a program would give 8 million Americans each year an opportunity to move into newer and better homes."

**NWAHACA Brochures
Tell Dealers
about . . .**



“WHAM” — Sales Punch at Local Level

**. . . designed to turn sales potentials into sales
of heating, cooling equipment for home modernization**

COMPLETE DETAILS about “Operation Wham” — a method which the industry can use to develop profitable sales potentials existing in the home modernization market for warm air heating and air conditioning equipment — have been released by the National Warm Air Heating and Air Conditioning Association in the form of four descriptive brochures.

“Wham” stands for *Warm Air Heating and Air Conditioning Modernization*.

Developed by a sub-committee of the publicity and merchandising committee of the association, “Operation Wham” has been designed as a promotional project in which the entire industry can cooperate. (The preliminary steps taken in developing the program were reported in the article, *Warm Air Convention Packs a “Wham,”* American Artisan, January 1954.) The program is now in full swing and will be used throughout the country, NWAHACA reports.

“We planned ‘Wham’ as a promotional tool which might be used to cultivate consumer sales at the local level,” said Irv Seith, Niagara Furnace Div., Forest City Foundries Co., who is the sub-committee chairman. “The ‘Operation Wham’ plan provides a method by which warm air heating and air conditioning dealers in each city and town can team up with the local newspapers for the purpose of conducting a public information campaign to get the home owners to thinking, talking and buying modern, up-to-date warm air heating and air conditioning equipment,” he said.

“Wham” in Limelight Once a Week

A local “Operation Wham” campaign consists of a schedule of pages in the local paper — one page on the same day of a consecutive number of weeks — in which

the subject of warm air heating and air conditioning predominates, both in editorial copy and in advertising.

Editorial copy and illustrations for these pages are furnished by the NWAHACA publicity department. The ads are supplied by local warm air heating and air conditioning dealers.

“The intent of the campaign is to provide our industry with a medium in each city or town with which to ‘get through’ to the owner our message about the importance of warm air heating and air conditioning when modernization of the home is planned,” commented H. P. Mueller, Jr., Mueller Climatrol, who is another member of the sub-committee. He continued, “The purpose is to give full page limelight to heating and air conditioning one day a week and to make it possible for every local warm air heating and air conditioning dealer to share in that limelight. The editorial matter and photographs will give every participating dealer’s ad extra support. No dealer need buy any more advertising space than he normally does.”

The plan of the operation has been kept as flexible as possible in order that it may be fitted to meet the specific conditions of each locality in which it is used. It can be conducted any time during the year. Length of time of the campaign is left up to the decision of the local newspapers and dealers who participate. The campaign can run for a period of six, eight, 10 or even 13 consecutive weeks, whichever period is considered necessary.

Details of the plan have been mailed by the association to the advertising managers of newspapers across the nation with circulations of 25,000 readers or more.

Members of the industry who are not members of the association may obtain copies of the booklets describing the program by writing to the Editor, American Artisan, 6 N. Michigan Ave., Chicago 2.



EARLY STEP in checking controls is seeing that the ignition timing adjustment is set for an "on" period of 90 to 120 seconds



THE TEMPERATURE INDICATOR dial on the thermostat is adjusted to coincide with the cover thermometer (which already has been checked against a standard pocket thermometer)

How to Check and Balance Warm Air Heating Systems

. . . after completing the installation

A WARM AIR job is never considered completed by the Oole Heating Co., of Grand Rapids, until a final inspection report has been made. One of the requirements of this inspection is that it be performed on a day when the outside air temperature is between 15 and 20 F.

The inspection begins with a check of all controls, followed by a series of adjustments on the burner to achieve the highest possible combustion efficiency. When this has been finished, the air flow to each room is adjusted in accordance with the volume specified in the original estimate. Finally instructions are given to the customer.

For checking the controls, the wiring diagram for the job is checked to be sure the electrician has followed instructions. The safety switches are checked to see if they operate at their predetermined setting. The combustion switch is checked and the ignition timing adjustment set for an "on" period of 90 to 120 seconds. The

thermostat thermometer is used to set the adjusting dial after it has been calibrated against a master thermometer. Also, the barometric damper is adjusted with the aid of a draft gage for a 0.02 in. draft.

The final checking of the controls begins at the humidistat, where the water adjustment is made to correspond with the requirements of the building and according to manufacturers' recommendations (which are contained in their manuals).

Adjusting the Fuel Burner

The adjusting of the fuel burner requires a series of steps designed to achieve complete combustion and a minimum of smoke. Mr. Oole's procedure is as follows:

1. Adjust the fuel pump for 100 lb pressure.
2. Adjust the air damper for a bright yellow flame where the flame tips are just tinged with smoke buds.



BAROMETRIC DRAFT REGULATOR is adjusted for 0.02 in. water gage reading on the draft gage



THE FINAL CONTROL CHECK involves adjustment of the humidifier for continuous supply of water

Well known dealer tells how to

- check controls
- adjust fuel burner
- balance air flow
- explain system to home owner

Check each adjustment quickly at the combustion chamber inspection port.

3. Verify the air adjustment by taking samples of the flue gases. Use a smoke tester and readjust the air volume until a No. 2 smoke is obtained.

4. Check the flue gas for its CO₂ content and temperature. These readings are checked against an efficiency chart for the combustion efficiency of the burner. Several different adjustments are made and each is checked in the same manner until the highest efficiency is obtained with a smoke test not higher than a No. 2.

The nozzle size of the burner is known and by calculating the volume of oil against its Btu rating per gallon and then multiplying by the efficiency, the burner output is found. This figure must check closely with the Btu requirement as determined in the original estimate for the building. If this figure varies considerably from that required, adjustments on the fuel input must be

made. This will require a change in the nozzle size and the checking of the fuel pump pressure.

Balancing Air Flow

The air flow is adjusted to operate on the continuous air circulation principle, then "balanced" to provide a distribution system that will deliver the correct quantity of heated air to each room. The procedure used by Mr. Oole involves seven main steps:

1. Adjust the blower motor pulley to operate at its lowest speed.
2. Measure the discharge air temperature near the furnace plenum. This temperature should be 165 to 175 F. If the high limit control is set for 175 F cut-out temperature, the control will have the effect of adjusting the fuel input to the house requirements where the equipment is oversized or where the adjusted input is too great.



FIRST STEP in adjusting the fuel burner is adjusting the fuel oil pump for 100 lb pressure . . .



AFTER WHICH the air adjustment is visually checked at the combustion chamber inspection port . . .



AND THE AIR ADJUSTMENT is verified by using a smoke tester on the flue gas samples . . .



WHICH ARE ALSO CHECKED for CO₂ content and temperature. Note complete set of combustion and air testing instruments on floor

3. All main and branch duct dampers are placed in their wide open positions.

4. All supply registers are checked for the velocity of the air being discharged.

5. Air velocity at registers is converted to volume of air delivered. This is accomplished with the aid of the manufacturer's rating for the registers used.

6. Air volume is checked against the quantity specified

on the floor plan; if there is a difference, it is corrected by adjusting the damper to that branch duct.

7. When each branch has been adjusted to supply the air volume required, a complete check of all registers is made to be sure that the adjusting of some branch duct dampers did not materially affect the volume delivered from each register.

When the balancing of the air flow has been completed



FOR BALANCING AIR FLOW,
the discharge air temperature is
measured near the furnace plenum



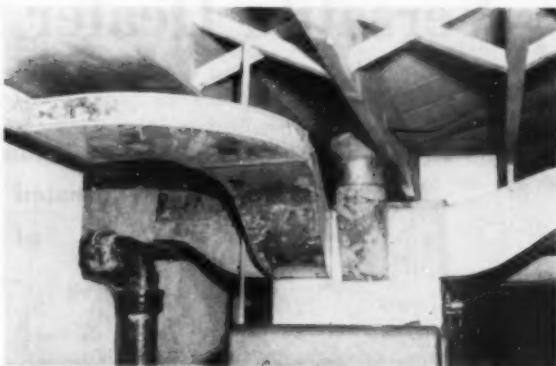
AIR DELIVERY velocity is determined with an anemometer and air temperature is taken at the same time with a standard pocket thermometer

each register is checked for the temperature of the discharged air. If any register is found to have a low discharge temperature, the cause is determined by an examination of the duct runs. If the low temperature is due to the duct passing through unheated areas (such as a crawl space or long runs in an unheated basement), the remedy often lies in insulating that portion of the duct exposed to these conditions.

Explaining to the Customer

When a final check of the distribution system shows both air volume and discharge temperatures to meet the specifications, it is then time to explain to the customer how to get the most satisfaction from his warm air heating system. Mr. Oole suggests doing it this way:

1. Explain the instruction card (which Mr. Oole tacks near the furnace).
2. Show where the fuse box is located and which fuse controls the electrical circuit for the burner (Mr. Oole uses a dab of green paint to mark this fuse).
3. Explain the function of the reset button on the combustion control and a few of the troubles that may cause the safety mechanism to operate but which would not require that inspection be made by a service man.
4. Emphasize that if the reset button mechanism continues to throw-out on safety, a service man should be called.
5. Show how to remove and clean filters, and explain when they should be replaced.
6. Point out the fuel oil storage tank and explain how to tell when a fresh supply of oil should be ordered.
7. Explain the hand valve at the tank shut off.
8. Show the fuel oil filter and explain that the cleaning of this part of the system is automatically taken care of by the service man on his annual inspection and adjustment service call.
9. Point out that oil leaks can occur from excessive vibration that may be due to other causes not associated with the oil burner — that any small seepage of oil should be investigated and a service man called to examine the fuel lines.
10. Show where the motor and blower bearings are and explain how to oil them — also mention how often this oiling should take place.
11. Instruct the home owner to report any unusual noise that may occur in the equipment.
12. Show humidifier adjustment and explain how it operates.
13. Point out the duct dampers and the adjustments — mention that these adjustments cannot be altered without upsetting the remainder of the system.
14. The final instruction covers the thermostat. Explain how it controls the house temperature and how to set it to achieve the desired temperature.



DUCT DAMPERS are pointed out to home owners who are told that adjustments here cannot be altered without upsetting air distribution system. Note that all ductwork was designed to fit as close to the ceiling as possible. Each duct has one damper



with a huge copper Indian —

Versatile Dealer Attracts Customers

**... who know that the sheet metal skill which
created the Indian is put to use in all types
of heating, cooling and ventilating jobs
— from pig nurseries to TV studios**

"THE WARM AIR heating business has changed a great deal since I started in it 50 years ago," says Herb Drews, Sr., of Danville, Ill. "My first job was as an apprentice furnaceman, and many times it was our job to fabricate the complete heating system right on the customer's property. We would drag the heat exchanger, in sections, into a customer's basement, bolt it and hot rivet it together, build a sheet metal casing around it, make the round duct and cut out the grille work, all at the customer's house."

From this beginning Mr. Drews graduated to journeyman sheet metal worker, then worked in a furnace factory. Later he took up the design of furnaces. Following this, Mr. Drews went on the road selling furnaces, and in 1932 he started his own warm air heating and sheet metal contracting business, with the help of his son, Herb, Jr., then in high school. Mr. Drews describes his son's interest and engineering ability as enabling the company "to progress as rapidly as it has."

Today there is no job, regardless of size, that the Drews' won't tackle — be it heating, cooling or ventilating. They recently completed year 'round systems for a television studio and broadcasting station, a super-

market, a medical center and an office building. The smallest of these used a 210,000 Btu furnace and a 10 ton air cooling system.

All the cooling systems mentioned are connected to water cooling towers, which are part of all recommendations submitted with each bid proposal. Mr. Drews feels that the increasing demand on water supply systems is not nearly so important a factor as the disposal of waste water. In his proposal he includes this advice, and most of the prospects accept his bid based upon the added service he has provided.

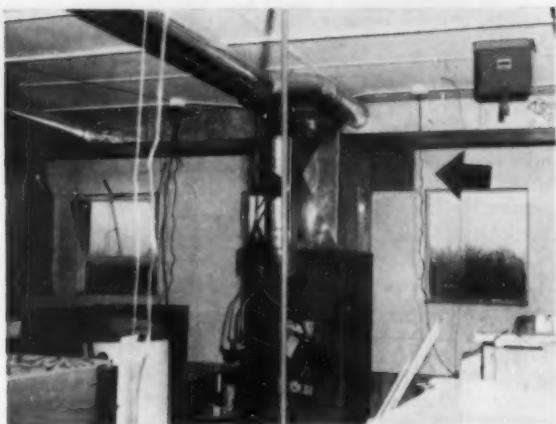
Unusual Symbol Advertises Company

Advertising is an important operation of his business and he uses many of the standard methods such as radio, television, Sunday newspaper, telephone and city directory ads to keep his name before the public. However, he has gone one step beyond this and has associated his firm's activity with a symbol. The American Indian, shown above, appears on all of his ads with the words, "See Herb Drews at the Indian."

The Indian, made by Mr. Drews, is a masterpiece of



OVERHEAD DUCT SYSTEM in a livestock experimental station provides perimeter heating to wall outlets which discharge downward to the floor. Livestock pens are in the foreground



HEATING SYSTEM installed by Mr. Drews utilizes outside air intake (arrow) for 100 per cent ventilation and a barometric damper (top, right) to control air quantities to attic plenum and exhaust fan

sheet metal craftsmanship. It is made from hand hammered copper sheets soldered together to form a statue 16½ ft high. The waist is 93 in. in circumference, the bow 14 ft from tip to tip. The arm and head bands are of stainless steel.

The statue is dedicated to Chief Kesis, a prominent chief of the Kickapoo tribe which had much to do with the early history of Danville. People from many states, passing by, stop and take pictures of the huge Indian and often send copies of their photographs to Mr. Drews. The symbol is by now virtually a legend in the Danville area and is associated with Herb Drews' name.

Variety of Jobs — from Pigs . . .

If variety is the spice of life, then Mr. Drews has a most interesting one, because whatever the heating, cooling or ventilating problem, the people of Danville go to him for a solution. Recently the Consolidated Products Corp. livestock experimental station in Danville asked his aid in an experiment with swine. It was believed that if newly born pigs were nursed and weaned in a controlled temperature, free of drafts and with adequate outside air, the rate of mortality could be lowered and the animals would live a healthier life.

The solution to this problem was to install a 90,000 Btu furnace and a perimeter duct system so that sufficient warm air was distributed along the outside walls to offset the heat loss from the walls. All return air was exhausted to the attic, which was vented by the use of a propeller attic fan.

To maintain an even flow of air to the attic — thus reducing the possibility of drafts — barometric dampers were spotted so that each 100 sq ft of the ceiling had one damper. Each damper was adjusted to permit only a

specified quantity of air to flow to the attic.

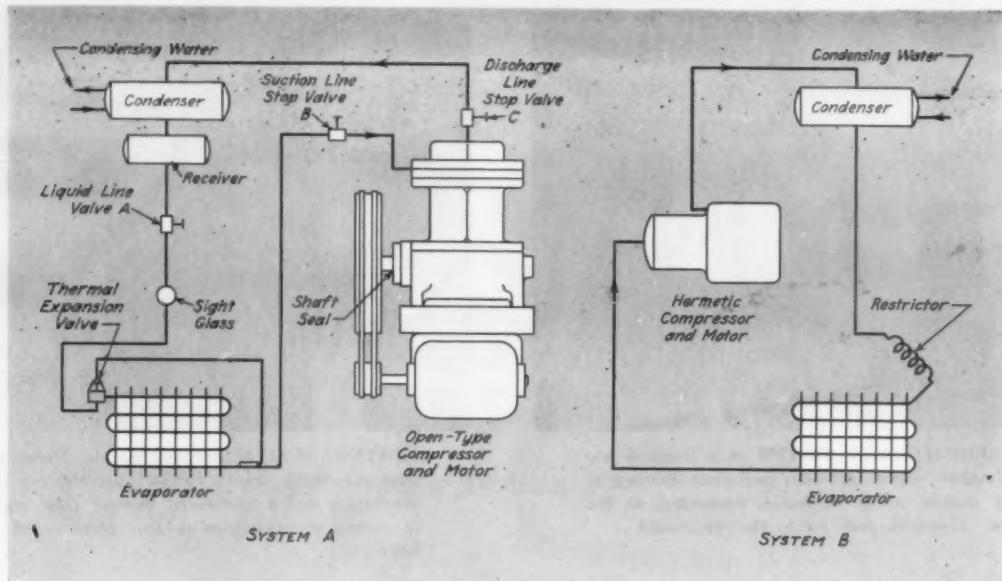
All make-up air was taken from outside of the building, no air being recirculated; however, an opening was made in the outside air intake to permit the taking in of room air for reheating if the officers of the experimental station so desire in the future.

. . . to TV Studios

Another recent problem was the air conditioning of a television studio where air velocity noise had to be kept at a very low level because the sensitive microphones are kept in continuous motion during the time a show is in progress. The heat load for a television studio varies considerably throughout the day. Even in February it is sometimes necessary to provide mechanical cooling to the studio area. This is due to the high heat output of the lighting accessories and other electrical devices. This same studio must be heated during the periods when it is unoccupied because the tubes and other essential television equipment may not operate well if permitted to reach lower than normal room temperatures.

Mr. Drews' solution to this problem involved many more ceiling diffusers than are normally used in an air distribution system. In addition, a series of interconnecting return ducts join an under-the-floor tunnel, permitting the return air to be shunted either to the furnace or cooling equipment or divided so that part of the return air can be directed to both pieces of equipment — thus using both heating and cooling to provide the right temperature for the large volume of air required to keep the studio comfortable.

His willingness to face a problem and see it through is why Danville-ites "See Herb Drews at the Indian."



I THE SEALED REFRIGERATION SYSTEM (right) incorporates a hermetically sealed compressor and utilizes a restrictor rather than an expansion valve. An open type system is shown at left

Replacing Parts in Sealed Cooling Systems

By S. W. Reid

Air Conditioning Engineer
Gilbert Associates, Inc.

. . . which have no valves or other easy means of entry. Sample problem — replacing defective motor-compressor unit. The step-by-step field procedure is described in detail

SUCCESSFUL DEALERS in residential air conditioning know how important it is to back up strong merchandising with prompt and efficient service. Air conditioning for the home should not be sold over the counter as a "package" containing certain machinery. A much better sales approach emphasizes the dependable year 'round comfort which the entire system can provide. Good selling technique can move the "package"

out of the dealer's stock, but well developed service techniques are vital in making and maintaining installations which swell the lists of satisfied customers.

In this series of articles we do not have the space to discuss specific service procedures which are required for the various makes of conditioning equipment. Service men concerned with this equipment must familiarize themselves with any spe-

cial features. We are, however, discussing basic techniques which are fundamental to practically all service involving refrigeration systems.

Last month we illustrated how an evaporator coil is removed and replaced in a system having an open type compressor. The system we worked with was ideally equipped from a service standpoint with a receiver, liquid line sight glass, a generous quantity of refrigerant, and

all the necessary valves and gages. We saw how the service man pumps down the system to make it possible to cut in to the low side with very little loss of refrigerant. We then followed the steps of re-brazing with nitrogen in the lines to prevent internal scale, purging to remove the nitrogen, leak testing, readjusting the expansion valve, and finally, adding refrigerant when necessary.

This month we want to consider a refrigeration system that does not have the service conveniences which we allowed ourselves last month. These conveniences were justified in early air conditioners either because of the frequency of failures which required entry into the system or because of the seasonal pump-down needed to prevent loss of refrigerant during cold seasons when the air conditioner was not used.

Two fairly recent developments in the small air conditioner field — the hermetically sealed compressor and the restrictor or capillary tube — have perhaps contributed most toward enabling manufacturers to market refrigerating systems without all of the service aids discussed last month. These developments are not new to the industry, but their application to air conditioners of the residential size (2 to 7½ hp) is new. Both have been thoroughly proven in the domestic refrigerator and the window-type air conditioner.

Less Servicing Needed

Fig. 1 shows two refrigerating systems, *A* which has an open type compressor and *B* which has a hermetically sealed compressor. System *B* requires less servicing than system *A* because there is no shaft seal on the compressor.

The shaft seal on the open type compressor functions to keep refrigerant from escaping at the point where the crankshaft emerges. It usually consists of two flat mating surfaces, one which rotates with the shaft and the other which is attached to the compressor housing. For the seal to function properly, a film of oil must be present between the surfaces. During the air condition-

ing season when the compressor operation is frequent, the oil film is automatically maintained by the compressor lubrication system. During prolonged shutdowns, however, the oil film has a tendency to become ineffective. If the oil film breaks down, loss of refrigerant will result. To prevent this loss, systems with seals must be pumped down whenever long periods of inoperation are anticipated. In addition, the high rotative speed of one surface in a seal against the other creates an inherent wear potential which, in spite of the oil film, eventually results in a loss of refrigerant.

The maintenance problems associated with the shaft seal are for the most part eliminated when the hermetically sealed compressor replaces the open type. As indicated in Fig. 1, the hermetically sealed unit has a steel shell which houses both the compressor and the electric motor, so that there is no need to provide a seal around the shaft. Furthermore, having a motor enclosed where it can be kept clean and well lubricated is an added improvement that cuts down on motor maintenance costs as compared with the open type arrangement.

A restrictor is used on the sealed system illustrated. The thermal expansion valve has a definite place in certain applications where the refrigerating plant must operate at high efficiency over a wide range of conditions. However, for small and medium packaged air conditioners, where operating conditions fall within a limited range, the restrictor has been found highly acceptable.

The restrictor is simply a tube, of small but accurately gaged inside diameter, which is interposed in a refrigeration system between the condenser and the evaporator. The diameter and length of the tube are chosen for a certain flow range to produce a pressure drop characteristic for a particular system. The restrictor has an almost unlimited life of trouble free operation.

By eliminating the need for the shaft seal and by using the restrictor, manufacturers are able to produce

(Please turn to page 96)

AIR CONDITIONING FUNDAMENTALS

the 20th in a series covering systems and all components

... in articles so far

► terms used in the field

► parts of the refrigeration system and how they work

► how to estimate cooling loads

► getting proper air stream patterns in the conditioned space

► duct design — sizing for summer vs. winter

► condensing units

► fans, fan motors and fan speeds

► filters

► condensers and water regulating valves

► cooling towers and evaporative condensers

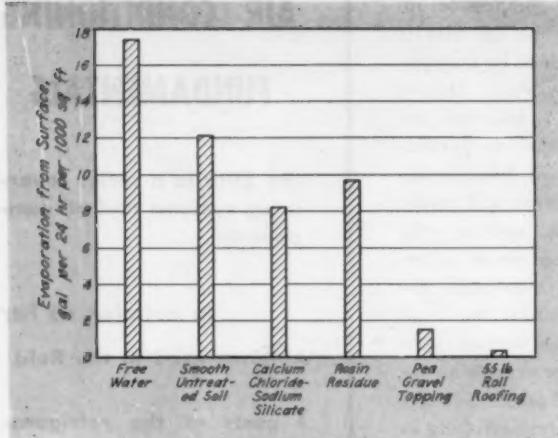
► equipment selection

► electrical controls and control systems

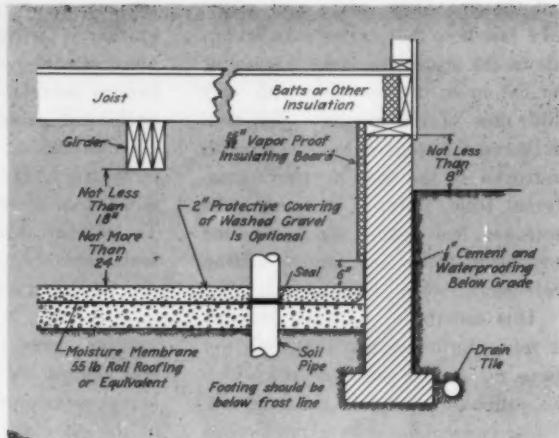
► sample problems — estimating cooling loads and selecting equipment

► detecting poor performance of cooling equipment

► replacing cooling system parts



1 MOISTURE EVAPORATION in crawl space varies with different surface treatments



2 RECOMMENDED CRAWL SPACE construction. Well cured wood should be used

How to Control Moisture in Heated and Unheated Crawl Spaces

To prevent excessive moisture from being transferred to rooms above during heating season and keep wood from expanding and contracting

authors give tips on

- soil surface
- moisture barriers
- ventilation openings
- construction material

By S. Konzo and H. T. Gilkey
University of Illinois

IN THE previous article five problems were outlined in connection with crawl-space plenum warm air heating systems. Two of these problems have been discussed in the previous

article — the problem of dust fall through floor registers, and the problem of making the system conform to the provisions of the National Fire Protection Association. In this issue two additional items will be discussed — the problem of moisture control in the crawl space and the problem of wood shrinkage.

In the next article the subject of heat loss from the crawl space will

be discussed in detail.

The problem of moisture release from crawl spaces is an acute one, regardless of whether warm air is introduced into the space or the space is unheated. Furthermore, conditions may be more critical in the spring and summer months when the heating plant is not operating. However, the heating dealer may often be blamed for conditions which

Data for Fig. 1 is from HHFA technical bulletin No. 8, January 1949.

Fig. 2 is taken from NWAHACA Manual 4, *Warm Air Perimeter Heating as Applied to Structures without Basements*, 3rd ed.

are not directly connected with the operation of the heating system. It is the purpose of this article, therefore, to present available data on the subject of moisture release in the crawl space and suggested methods of control.

Problems Vary with Season

When we break down the problem into its component parts we find two distinct phases.

First, in the spring and summer months, which may coincide with the rainy season for the locality, the heating plant will not be in operation and the damp ground surface will evaporate water into the crawl space. The result is that the air temperatures will range between 50 F and 70 F, and the relative humidity of the air in the space will be quite high. These high relative humidities will promote mold growth in the dark spaces and at the same time cause all wood members in the space to absorb moisture. Normally, the recommended control is ventilation of the air space, which may not be sufficient control in many localities.

Second, in the winter months, when the ventilators are closed and the house is being heated, the air temperature range of the closed crawl space will be between 40 and 60 F. If warm air is not introduced into the crawl space, the relative humidities will be fairly high, but not as high as during the summer months, since both the indoor air above the space and the outdoor air are drier than during the summer months, and the moisture from the crawl space will travel outwards and upwards.

When warm air is introduced into the crawl space, the air temperature in the crawl space will be higher than the room air temperatures above the space. Furthermore, the relative humidities will be relatively low. As a matter of fact the wood structural members may tend to dry out, in spite of the fact that the ground moisture evaporation may be quite high. With crawl space plenum heating, the moisture in the crawl space will be transferred to the rooms above.

The solution, therefore, calls for preventing trouble not only during the summer months when the heating plant is not operating, but also during the heating season, when drastic changes in the moisture content of the wood must be avoided. Unfortunately, wood expands when the moisture content increases and contracts when it decreases, so that a wide range of moisture content will exhibit itself in marked size changes during the year. Such expansions and contractions in the flooring members are not desirable.

Evaporation Rate High

Studies on the amount of moisture which may originate in crawl spaces have been conducted by the Housing and Home Finance Agency and reported in HHFA's Technical Reprint No. 1. The amount of water which may evaporate from untreated soil surface in a crawl space is indicated by Fig. 1, which was drawn by the authors of this article from the original HHFA data. It should be observed that the units are in terms of gallons of water evaporated for 1000 sq ft of surface during a 24 hour period. For soil containing coarse material, the rate of evaporation of water was much lower than for soil such as silty clay. The conditions of the air above the soil were an average air temperature of 58 F, an average relative humidity of 69.7 per cent, and an average soil temperature of 51 F.

Thus, even for an unheated crawl space in which the soil surface is smooth, the evaporation from the soil is about two-thirds as much as would be expected to evaporate from an open pan of water. The report of these studies states that "it is quite probable that had the soil used in these tests been roughened, the evaporation might well exceed that from free water." Under some conditions, therefore, we might expect to encounter even greater moisture problems than would be indicated by the HHFA report.

Another interesting result of these studies is that with certain soils, the

(Please turn to page 100)

How We Got Where We Are In **WARM AIR** **PERIMETER HEATING**

the 17th in a series
planned to tell about:

► **Investigations in the Research Residences at the University of Illinois**

► **Design and installation data (condensed from manuals published by the National Warm Air Heating and Air Conditioning Association)**

► **Specific phases of warm air heating**

... in articles so far:

► **heating basementless homes**

► **warm air ceiling panels**

► **heating slab floor homes with ceiling and floor panel systems**

► **floor panel-convection heating for slab floor homes — partially open and completely open**

► **survey of field practices**

► **new research residence built**

► **comparison of two loop perimeter and three convection systems**

► **comparison of perimeter loop and two loop system**

► **loop vs. radial system**

► **perimeter laboratory studies (three articles)**

► **crawl space heating**

► **crawl space moisture control**



CAREFUL ROUTING and planned use help the firm operate with the fewest possible trucks, considerably lowering the cost of servicing in a huge, sprawling metropolitan area



MAKING A BID, John Waner, (seated), president of the company, reviews every cost factor, including distance of job and effect of trucking costs, before mailing to prospect

How to Keep Truck Costs Down

**One dealer has a four point program —
stresses driver safety, uses special trucks
for special jobs, keeps one man trained for maintenance,
plans carefully for truck replacement**

ARE TRUCK FLEET costs eating into your profits? If so, you may be interested in the simple program that has been cutting truck expenses for City & Suburban Heating & Sheet Metal Co., Inc., Chicago. As outlined by John L. Waner, president of the firm, the plan has four basic points.

- Emphasis on driver safety.
- Using the proper truck on each job.
- Controlled maintenance costs.
- Regular replacement.

Through close attention to these points, City & Suburban operates its fleet of 11 trucks for not much over \$10,000 per year. Of that figure, only 50 per cent goes to depreciation, maintenance and insurance. The rest is for fuel and oil.

Seeing that drivers drive safely and take proper care of the trucks is the most important factor, according to Mr. Waner. He and Neal M. Bidwill, vice president, carefully pick out which of the men may drive trucks. Each of these men drives one truck regularly.

"The man we pick to drive a truck must be serious and sober," Mr. Waner says. "If he has that atti-

tude from the start, he needs less training.

"We impress on the man that in choosing him to drive, we've given him an important responsibility. In return, we want him to drive safely, not break speed laws. He has to pay his own fines if he commits traffic violations. Also, we want him to handle the truck carefully so that it will need a minimum of mechanical repairs."

To remind drivers of the responsibility they have accepted, a small tag in the cab of every City & Suburban truck reads: "Treat This Truck As If It Were Your Own."

One result of this emphasis on driver safety has been a very low accident rate, in spite of the fact that the trucks are constantly used in crowded city traffic. In recognition of this good record over the years, the insurance company covering this fleet granted City & Suburban a special low rate two years ago. This rate is still in effect and will remain that way as long as the firm maintains its good safety record. The reduced rate entails a saving for City & Suburban of more than \$500 a year.

Using the proper truck for each job is another im-



USING THE PROPER TRUCK for each type of job is important. This oil tank delivery truck has an open back for tanks, closed side bins for pipe and tools



ONE OF THE firm's three 2 ton stake body trucks has a mechanical tailgate to lift heavy equipment. It pays for itself in manpower saved, the company states

portant cost control, but it takes advance planning to make it work, Mr. Waner points out.

Suiting Fleet to Particular Needs

"It makes sense that a big truck costs more to buy and operate than a small one," he says, "but for a given use, it's cheaper to make a delivery by one big truck than two small ones." He feels that there isn't any one "ideal truck assortment" for a sheet metal and warm air heating contractor; rather, the assortment should depend on the type of work, area, methods, etc. The company tries to suit the fleet to its particular needs.

As its name indicates, City & Suburban handles jobs throughout Chicago and its suburbs. More than 98 per cent of its work is warm air installations in new homes. It handles about 900 to 1000 units a year. With this type of business, it needs mostly special-purpose trucks rather than all-purpose trucks. Its fleet consists of a variety of types:

Three 2 ton stake body trucks, for all large deliveries to job sites. To assist in handling furnaces and other heavy equipment, one of these has a mechanical tailgate.

Two 1 ton open trucks, for gutter and similar work. These stay at the job all day while men work.

Two 1 ton tank delivery trucks, especially made for delivery and installation of oil tanks. The body, which carries the tanks, is open, but the sides have closed storage areas for tools, pipe, etc.

Three $\frac{3}{4}$ ton closed panel trucks, for service use. The small size enables repair men to go from one call to the next and park easily. A closed back makes possible storing of a large traveling inventory of spare parts and tools.

One station wagon, for special service calls. Costing

about as much as a car to operate, the station wagon can also be pressed into emergency service for small deliveries or supervisor's use.

"We have just enough trucks, and just the right ones for our needs," sums up Mr. Waner.

Planned Maintenance and Replacement

The next aim — control of maintenance costs — is accomplished by having one of the firm's own men do much of the work. One man, who is a truck driver and mechanic rather than a sheet metal man, handles most of the greasing, oil changes, washing and minor repairs on the 11 trucks. An outside shop does major repair work.

By splitting the maintenance work in this manner, the firm gets the bulk of routine maintenance done at a minimum of cost while keeping its trucks in top operating shape.

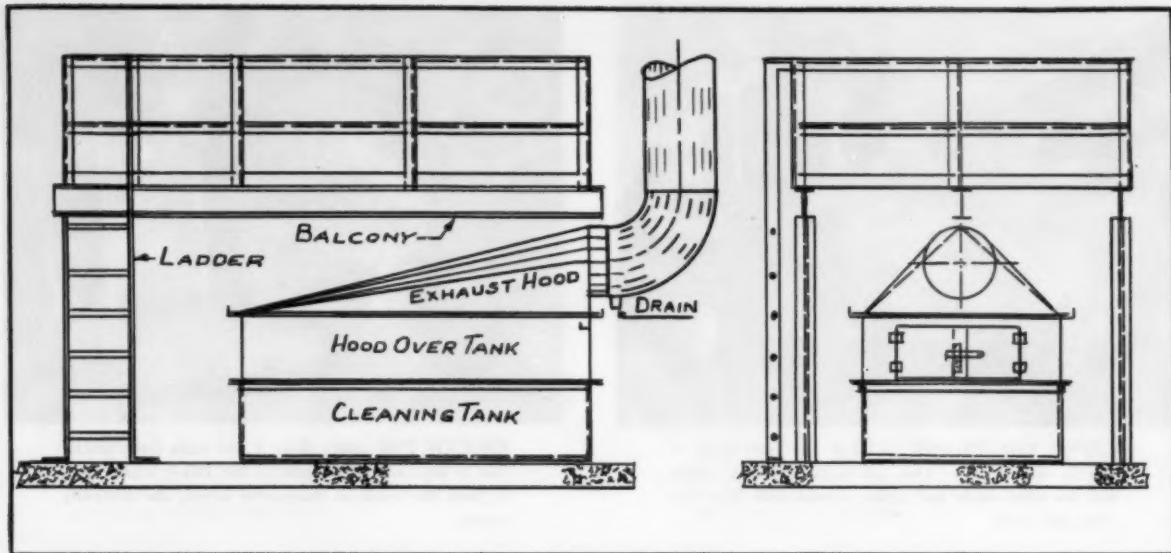
"As everyone knows, there comes a time when it's cheaper to replace a truck than to continue repairing it," Mr. Waner says. "We have no standard replacement interval because our various trucks are used in different ways."

"A truck that makes deliveries all day all over the city, and averages 20,000 miles a year, has to be replaced in three or four years, we find. The gutter trucks, which put on 6000 miles a year, are good for six or seven years."

"We don't fool around trying to get a few more months' service out of a worn-out truck. With labor costs so vital in our competitive business, we can't afford to have men waiting on the job because a truck breakdown has held up the materials."

City & Suburban plans realistically for replacement by knowing when each truck will be worn out and pre-

(Please turn to page 104)



1 FRONT VIEW (*left*) and end view (*right*) of the problem application — an exhaust hood over a cleaning tank which is located under a low balcony

Making a 90 Deg Riser Hood

. . . with rectangular base and round outlet
— a practical solution when
a cleaning tank is located under a low balcony.
A simplified layout method is used

THE PROBLEM application of the month, an exhaust hood over a cleaning tank, is shown in Fig. 1. The tank is located under a low balcony, a condition which would make the design of a special type hood with an end exhaust take-off the only practical solution to the problem.

Consideration must be given to permit the maximum amount of headroom in an installation of this type, the minimum requirement being 6 ft 8 in. from the finished floor line in most industrial applications. A drain should be installed at the base of the stack.

Practical sheet metal layout means getting the most work done with the minimum drawing of views and development lines. It is therefore necessary to analyze each shop problem and apply the simplified method of solution that will produce the maximum result in the minimum time.

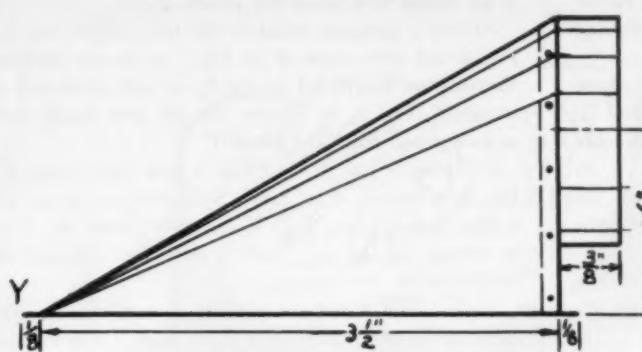
An analysis of the front and end views, Figs. 2 and 3, shows that the fitting is symmetrical about the center line on Fig. 3, and that all the work lines on Fig. 2 are

drawn from the common point Y. It can be concluded that the necessary patterns can be developed from a half end view drawing and an extended line drawn through point A, Fig. 4, equal to the given length of the base line on the front view, Fig. 2, which is $3\frac{1}{2}$ in.

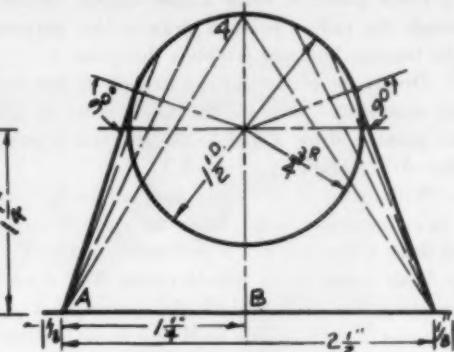
The following is the step by step procedure for the pattern problem solution.

To Construct Simplified Method Drawing, Fig. 4:

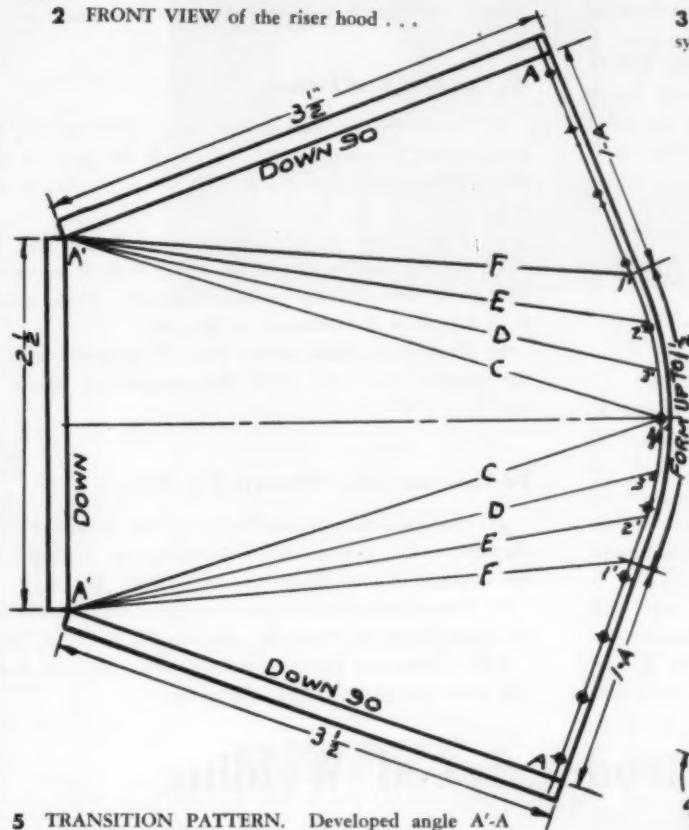
- a) Draw the horizontal center line marked CL and on this line establish the point R. With R as center and given radius $\frac{3}{4}$ in. draw a half circle. Where the half circle and the horizontal center line form a junction to the left of point R, mark the junction point 4.
- b) From R measure $1\frac{1}{4}$ in., establish the point B and through this point draw a line perpendicular to the center line. From B measure down $1\frac{1}{4}$ in. and mark the point A. From point A measure $3\frac{1}{2}$ in. through point B and establish point H.



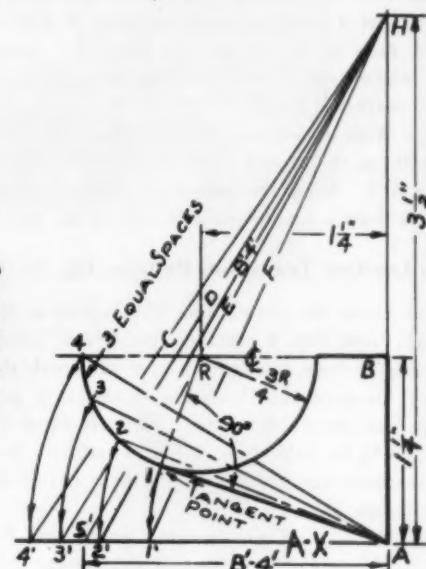
2 FRONT VIEW of the riser hood . . .



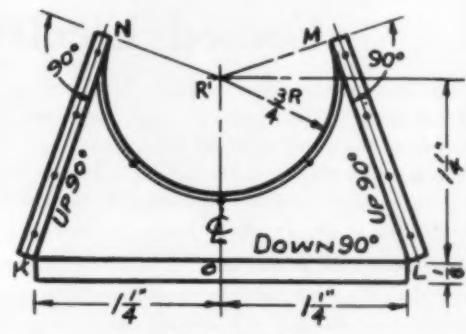
3 AND END VIEW show the fitting to be symmetrical about the center line



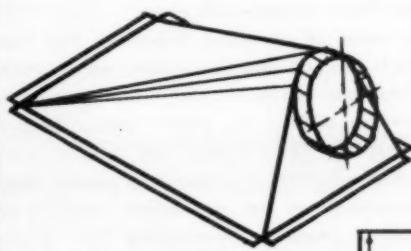
5 TRANSITION PATTERN. Developed angle A'-A
— A'-A must be a right angle



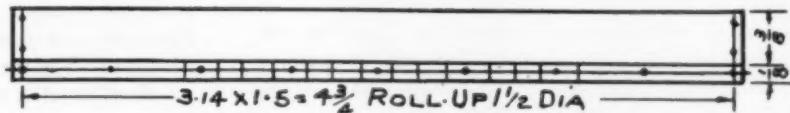
4 HALF END VIEW from which the necessary patterns can be developed



6 END PATTERN



PICTORIAL DRAWING



7 COLLAR PATTERN — the final step

c) From point A, draw a line tangent to the circle. Through the radius point R draw a line perpendicular to the tangent line and establish the point 1.

d) Divide the section of the half circle 1-4 into three equal spaces and indicate the new points as 2 and 3. From point A draw a line to the left and perpendicular to line A-B. Mark this line A-X.

e) With point A as center and radius A-1, draw an arc to intersect line A-X. Mark the point 1'. From this point draw a line to point H and mark the line F.

f) With center point A and radius A-2, draw an arc intersecting line A-X. Mark the intersection point 2'. From point 2' draw a line to H and mark the line E.

g) With point A as center and A-3 as radius draw an arc to intersect line A-X. Mark the intersection point 3' and from this point draw a line to H. Mark the line D.

h) Set a compass point on point A and with radius A-4, draw an arc to intersect line A-X. Mark the point of intersection 4' and from this point draw a line to H and mark the line C.

j) With a compass, measure line B-4, and with this length as radius and point A as center, draw an arc on line A-X. Mark the intersection point 5' and from this point draw a line to point H. Mark the line B'-4'.

To Lay Out Transition Pattern, Fig. 5:

a) Draw the vertical line A'-A' which is $2\frac{1}{2}$ in. b) From Fig. 4 measure line C and from points A' on Fig. 5 draw intersecting arcs and mark the point 4'.

c) Measure line D on Fig. 4 and with points A' on Fig. 5 as centers draw arcs. Measure equal distance 4-3 on the $\frac{3}{4}$ in. half circle in Fig. 4 and with point 4', Fig. 5, as center, cut the arcs made with D as radius and mark the points 3'.

d) On Fig. 4 measure true length line E and with points A' on Fig. 5 as centers draw arcs. Measure arc length 3-2 on the $\frac{3}{4}$ in. radius half circle, Fig. 4, and with points 3', Fig. 5, as centers, cut the arcs made with

E as radius and mark the points 2'.

e) Set a compass equal to the true length line F, on Fig. 4, and with points A' on Fig. 5 as centers draw arcs. Measure arc length 2-1 on the $\frac{3}{4}$ in. half circle and with points 2', Fig. 5, as centers cut the arcs made with F as radius and mark the points 1'.

f) Measure line 1-A on Fig. 4 and with points 1' on Fig. 5 as centers, draw arcs. Set a compass at the given height line $3\frac{1}{2}$ in., Fig. 4, and with points A', Fig. 5, as centers cut the arcs made with radius 1-A and mark the points A.

Note: For a correct pattern layout, the developed angle A'-A—A-1' must be a right angle. Any deviation from a right angle will indicate error in layout.

To Lay Out End Pattern, Fig. 6:

a) Draw the horizontal line K-L which is $2\frac{1}{2}$ in. From point K, measure $1\frac{1}{4}$ in. Mark the point O and through the point draw the line CL perpendicular to line K-L.

b) From point O measure the given length $1\frac{1}{4}$ in. along line CL and mark the point R'. With R' as center and given radius $\frac{3}{4}$ in. draw a long arc. From points K and L draw lines tangent to the arc.

c) Draw lines from radius point R' perpendicular to the tangent lines and mark the intersection points M and N.

To Lay Out Collar Pattern, Fig. 7:

a) Calculate the circumference of the given $1\frac{1}{2}$ in. diameter collar pattern by multiplying the diameter by the constant 3.14. Thus, $1.5 \times 3.14 = 4\frac{3}{4}$ in.

b) Draw a rectangle equal to the circumference by the given length of the collar which is $4\frac{3}{4}$ in. $\times \frac{3}{8}$ in.

Add allowances for seams and joints, lay out holes and mark the patterns for fabrication.

Coated Electrodes Speed Welding

HEAVILY COATED electrodes containing large quantities of powdered metal in their coatings obtain increased welding speeds on the order of 50 per cent, according to L. K. Stringham, chief engineer, The Lincoln Electric Co. Mr. Stringham feels that the development of these electrodes is a milestone in the metal fabricating industry.

"In general," he points out, "as welding current increases, the speed of welding increases. The electric arc drawn from the end of a welding electrode performs the three functions of melting the core wire, melting the coating of the electrode, and melting the edges of the parts to be welded together. An increase in welding current increases the speed with which the arc can perform these functions. For any given size electrode, welding speeds can be increased until a maximum usable current is reached. Beyond this maximum current a further in-

crease causes difficulties and unsatisfactory operation.

"Electrodes with powdered metal coatings are designed to raise this top limit on welding speeds by eliminating or reducing the effect of these difficulties.

"The major cause of operating difficulties that limit welding speeds is the fact that the welding arc normally creates more heat than can be effectively used by conventional electrodes in melting the parent metal, the core wire and the coating. This excess heat usually is expended in melting an excessive amount of parent metal. The result, depending on the application, may be too much penetration, gouging, undercutting and spatter. Electrodes with powdered metal coatings use the excess heat available in the arc to increase welding speeds. The powdered metal in the coating is melted by this heat and becomes an additional source of metal for the weld, thus permitting an increase in welding speeds."



NEW PRESIDENT John Henke (*left*) receives congratulations from retiring president Charles F. Luppold



CONVENTION COMMITTEE going over schedule of events includes (*l. to r.*) Elmer Drebis, R. J. Cronan and Charles F. Luppold



RECEIVING HIS identification badge is Joseph D. Wilder; Mrs. John Gross pins it on

More Opportunities in Stainless Steel Specialties

. . . and increasing markets for metal roofing, warm air heating and residential air conditioning seen by speakers at annual meeting of Pennsylvania contractors

MEMBERS OF THE Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania will be taking advantage of expanding business opportunities in stainless steel specialties, warm air heating, residential air conditioning and metal roofing — if they follow suggestions offered at their annual convention, held in Reading, last month. A variety of speeches offered practical tips in all these fields.

In addition, the business of the association was carried forward with the election of officers to guide activities for the coming year. New officers include John Henke, president; E. W. Scarborough, first vice president; Harold Zimmerman, second vice president; R. J. Cronan, third vice president; E. W. Liebermann, secretary-treasurer; and J. E. Harper, Sr., sergeant at arms. Directors elected for three years are Sam Hahn, A. K. Kleckner and Bernard Lawrence; director for two years, Joseph Stark.

The application and fabrication of stainless steel products was outlined by Earnest M. Rains, Armco Steel Corp., who said, "Stainless steel is definitely the modern sheet metal man's metal. Today, and in the future, it

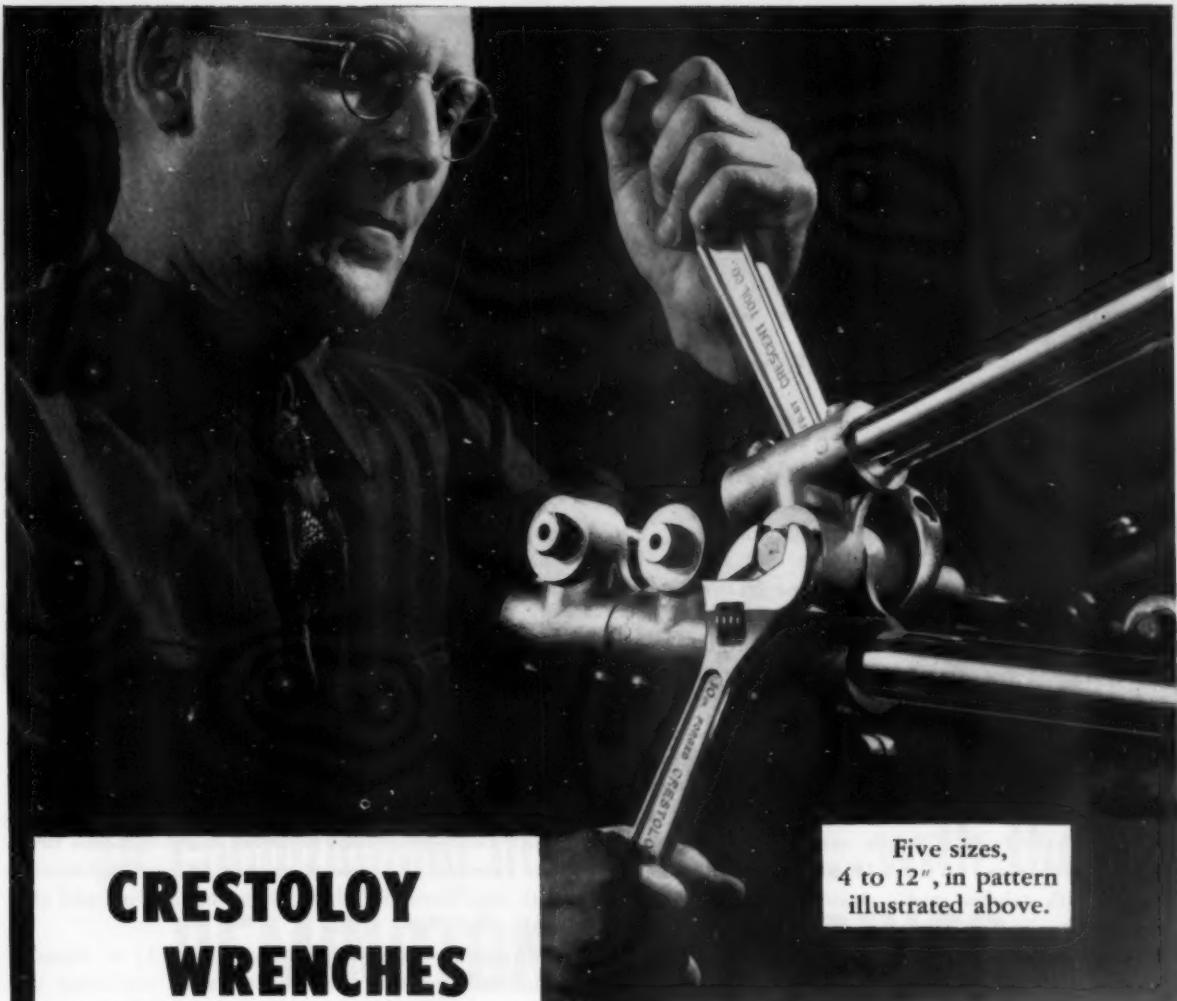
will make possible great opportunities for new business. Equally important, it is a metal which can be fabricated in the shop with existing equipment.

"The past few years have brought a big change in the demand for stainless steel. In 1945, for example, total production of stainless steel sheet, strip and plate in this country was 155,852 tons. For the record year of 1953, estimated production was 385,000 tons. That is 248 per cent over 1945 — more than in 1945 and 1946 put together. There is a definite trend to stainless steel, and it is going to continue — up and up. We haven't approached the true potential for custom made stainless steel products," he stated.

Opportunities for Stainless Work

Mr. Rains said that some of the most promising opportunities in stainless steel are roofing and drainage equipment and kitchen appliances — sinks, work tops, range hoods and cabinet trim.

He also described applications that "go beyond the home" — food serving and handling equipment (includ-



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STAINLESS STEEL for custom made cabinets is being discussed by (l. to r.) E. W. Scarborough, E. M. Rains, E. W. Liebermann, F. W. Coleman and H. S. Criswell



DECORATIVE METAL ROOFING materials are the topic of a discussion among (l. to r.) E. K. Thompson, Ray Farrington, A. J. Sabathne and J. H. Harper, Jr.

ing tables, counter tops, special sinks, exhaust hoods and wall coverings); and the food processing field (including canning, bottling, and packaging equipment). Most of this equipment is tailor made, he said. The food processing industry is booming because of our growing population and increasing demand for packaged foods, creating the need for all sorts of tanks, vats, chutes, conveyors and hoppers of stainless steel in processing and packaging plants, he explained.

"Another field is store front modernization and sign work," he said. "A new marquee, a stainless covered door, a stainless framed window, a new stainless sign — these are giving today's store fronts a face lifting. In many of these cases it is not necessary to make any structural changes. The old masonry or wood is covered with stainless steel. Inside the stores, there is also opportunity for stainless work in the form of new check out counters (for super-markets), built-in display cases, vegetable cases or bins, walk-in coolers, kick and push plates and similar equipment."

Mr. Rains pointed to the butcher shop and bakery as good prospects. Other important fields are paper and textile mills, many of which have stainless steel tables, chutes, carts, driers, exhaust stacks and hoods.

"To keep this equipment in operation requires maintenance work and rebuilding locally of some equipment. A great deal of this work on regular equipment can be handled by local shops," he said.

Tips on Fabricating Stainless Steel

The working of stainless steel is not difficult, but is different from ordinary steel, according to Mr. Rains. Like any other material, stainless steel has characteristics all its own that must be considered in fabrication. All work surfaces should be covered with corrugated cardboard, paper or soft cloth, to help prevent dirt, scratches and iron particles from marring the stainless. Sheets should be lifted and set down gently. If possible, fiber or non-metallic hold-down tips or adhesive tape should be used.

Mr. Rains explained that when certain parts are formed, nicks, burrs or rough spots on the brake may

damage stainless steel and spoil its appearance. Damage can be prevented by placing adhesive tape on the sheet or on the brake fingers and other contact points. There should be no iron or zinc particles on the roll forming machines that could become imbedded in the stainless; these machines must be kept clean.

Drills used on stainless steel should be of high speed steel and should be short for rigidity. Constant feed should be developed through steady pressure. If the drill is allowed to ride without cutting, the steel will work-harden. Drills should be ground with a 130 to 140 deg tip angle. On light gages, drills with sheet metal grind or so-called fly cutter grind do a good job, Mr. Rains said. Drill speeds must be slower than for carbon steels. For example, the same speed can be used on stainless with high-speed steel drills as can be used on mild steel with carbon steel drills.

Chromium-nickel stainless rivets up to $\frac{1}{4}$ in. diameter can be driven cold, Mr. Rains stated, explaining that larger ones should be heated to about 2000 F. Chromium-nickel rivets are tough and work-harden rapidly; therefore, the heads should be formed quickly with one or two heavy blows.

Variety of Welding Methods

Stainless steel is readily suitable to all the common types of welding, except carbon arc, according to Mr. Rains. Welding practice is somewhat different, however. Chromium-nickel stainless expands under heat about 50 per cent more than mild steel and conducts heat only about a third as well. "Warpage may occur during welding unless you provide rigid support and quick removal of heat with bracing bars and chill bars," he cautioned the contractors.

To jig stainless steel for butt welding, a bracing and cooling bar is placed on the underside of the seam, all the way across. Bracing bars on the top side help hold the pieces rigidly in place. The jig assembly is then clamped together with several strong "C" clamps. The bar under the joint can be an ordinary copper bar or steel bar with copper insert; copper helps remove

(Please turn to page 106)



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HOMER BRUNDAGE, chairman of the convention committee, Earle Oole, retiring president of the association, and N. J. Biddle, secretary-treasurer, conduct the concluding business session



"ARTIST AT WORK" — E. A. Stafford, a past president of the association, adds a name to the list of firms that sponsored entertainment events at the convention

Success Factors "from A to Z"

. . . covered at convention of Michigan heating and sheet metal men, include making servicing profits, utilizing tax exemptions, estimating carefully and selling enthusiastically

IN HIS OPENING remarks at the 43rd annual convention of the Michigan Heating and Sheet Metal Association — held at the Pantlind hotel in Grand Rapids — Earle Oole, retiring president of the association, said that aggressive selling would be needed, "as 1954 is a competitive year." However, he pointed out that "American business and industry have always thrived on competition, and we have many services to offer. The challenge is to keep our industry strong and expanding." There are 3000 contractors in the state of Michigan who should be urged to join the association and cooperate in aggressive selling efforts, he concluded.

The mayor of Grand Rapids, Paul Goble, welcomed the convention. He described the city's facilities for taking care of conventions — and conventioneers — and the other features of Grand Rapids. He also told of several of his experiences as a big-game football official.

Making Profit in Servicing

"Eighty-seven per cent of the homes in America — both new and old — are wasting heating fuel," said John Sibarium, manufacturers' representative with a wide experience in oil heating, in introducing his talk

on making a profit in service work. Each fuel has its problems, he said.

The opinion of many is that you must lose money on service departments to stay in business, but this is not true with proper organization and training of personnel, he stated. Most service mechanics need additional training, he feels. They must know combustion testing — "the key or guide to heating plant servicing." It's impossible to tell anything about the adjustment of an oil burner just by looking at it, so they must know thoroughly what stack temperature, CO_2 and draft readings mean.

On a call, the service man should first talk to the customer for five minutes or so; such conversation will usually give a good lead to the trouble. The service man must have an affirmative manner to build customer confidence, he said. If the service man can't locate the trouble, he should go out and take a smoke, he recommended. Then — if he still doesn't know how to diagnose and correct the trouble — he should call his office for someone who does.

More than 5 per cent repeat calls on service represent a "tremendous waste of money," Mr. Sibarium said, "although the average on oil heating calls in the East

more Features give you more Sales

ZERO CLEARANCE

Cozy's live-air insulation efficiently keeps heat loss through the casing to less than one per cent. This not only allows space saving "zero" installation, but keeps fuel costs at a minimum.

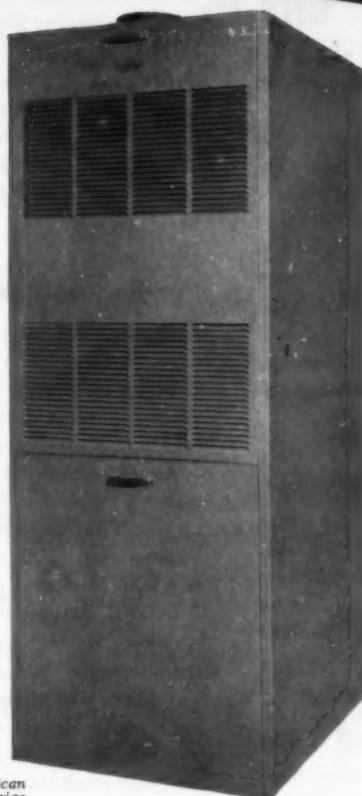
COMPLETELY ASSEMBLED

Cozy comes ready to install, completely wired, and inspected. Just set it where it's wanted, connect the wiring to a 110-volt line, attach the ducts and it's ready for years of trouble-free service.



Tested and approved by American Gas Association Laboratories under American Standards for alcove and closet installations.

After a quarter of a century of experience in making gas-fired furnaces, The Advance Furnace Company now gives you a completely new line, six new models, of Cozy Forced Air Furnaces, designed to solve 90% of all home heating problems. The new Cozy Forced Air Furnaces are equipped with the exclusive "Curvic" Heat Wringer for



COMPACT DESIGN

Cozy Forced Air Furnaces take little space and fit "zero" clearance into closets, alcoves, utility rooms, on porches, or in basements, and allow more liveable space in the home. All parts are accessible and replaceable from the front without interfering with the installation.

USES 4-INCH PIPING OR REGULAR DUCTWORK

Both Cozy Upflow or Counterflow furnaces can be installed with the conventional duct system or the new four-inch piping system, giving you a furnace and the piping system to fit your home for comfortable, healthful living.

greater heat efficiency, Cozy fan-shaped burners for complete combustion, your choice of either direct- or belted-drive blowers, and many other exclusive features found only in Cozy. Ask your distributor or wholesaler about our sales producing "Dating" plan and high profit "Contractor" sales plan today.



Cozy Models 200-140 Upflow, and 201-140 Counterflow for large rambling homes.



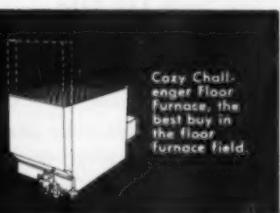
Cozy Models 201-105 Counterflow, and 200-105 Upflow for larger than average homes.



Cozy Model 200-75 Upflow and 201-75 Counterflow for installation in average homes with or without basements, or slab floors.



Cozy Wall Heaters available in a range of four sizes for single and dual installations.



Cozy Challenger Floor Furnace, the best buy in the floor furnace field.

COZY

A Product of
The ADVANCE FURNACE CO.
Wichita, Kansas

is 20 to 25 per cent." Records should be kept on every call so that the service man doesn't have to start from scratch the next time.

Three out of four homes need some modernization work, and they represent a "gold mine" of business opportunities, he said. The service man is as good a salesman as anyone, he feels, because 50 per cent of a sale is gaining the confidence of the customer — and the mechanic has this confidence when he has cleared up a trouble job.

He recommended preventive maintenance, which has cut call-backs "terrifically" for one dealer. For example, if clogging oil burner nozzles are a principal service problem, filters should be sold and installed to prevent the trouble. He urged that the dealer sell service contracts on installations, and stressed that the dealer shouldn't be afraid to charge amply for service work.

A service man "should average a minimum of eight calls a day," said Mr. Sibarium, and should carry enough parts and supplies in his car or truck to avoid spending too much time going to supply houses. The dealer should record time spent by service men in travelling, on the job, etc., to cut waste motion and make service work profitable.

Good Tax Counsel Advisable

"You can get into a lot of trouble if you think there are any fancy maneuvers to avoid taxes," warned Glen Speidel, CPA, Speidel and Kneen, Kalamazoo. But — he said — there are straightforward ways to minimize taxes, and good tax counsel is well worth the dealer's time and money.

Proper record-keeping — with hotel bills, ticket stubs, etc. preserved to support travel and entertainment expenditures — is essential. Proper and complete records on depreciation and repairs, differentiating between what is a repair and what is an improvement, make it possible to deduct repairs as expense so that just the improvements have to be capitalized.

He stressed the great importance of cash forecasting, and said that "it can make or break you." A cash forecast is needed to control inventories, allow expansion of the business, and to furnish information when borrowing funds from a bank.

State Sales Tax Tips

Reuben Forsman, director of the sales and use tax for the Michigan Department of Revenue, gave information on exemptions and other questions which arise in connection with this state tax. The tax applies to work done by a contractor or dealer, unless the organization for whom the work is done is exempt. Exemptions include the U.S. government, the state of Michigan, churches, hospitals, schools, institutions for the welfare and care of children and the aged, etc. An exempt non-profit organization must be registered as such with the Michigan Corporation and Securities Commission, he said.

He pointed out that a fraternal lodge, for example, would not be exempt necessarily, but an institution of that lodge — say a children's home — might be exempt.

In answer to questions from the audience, Mr. Forsman pointed out that if a contractor fabricates, say, some sheet metal, the fabrication is taxable at its delivered price at the job. Thus, the labor that goes into the fabrication is taxable — but the labor involved in the actual installation on the job is not taxable.

If a contractor has paid a tax on a job which he now believes is exempt, he can file a claim with the Michigan Department of Revenue for a tax refund within three years. The information furnished should include the date of the work, for whom the work was done, and the amount of the tax, together with any other data that may be necessary. "Dozens of such claims are paid every day," he said.

Priceless Ingredient — Enthusiasm

"Enthusiasm is the priceless ingredient in selling," said C. S. Stackpole, of the Union Asbestos and Rubber Co., Chicago, in a lively address at the convention luncheon. This was the quality that Walter Chrysler valued most highly in a man, he mentioned.

As a practical tip, he suggested that the best time to make an appointment for a sales call is for five minutes to or 25 minutes after the hour — but never on the quarter-hour. "No one is ever busy at five minutes to any hour," he said.

In a surprise presentation at the conclusion of the luncheon, Homer Brundage was awarded a certificate as the industry's "man of the month."

A most informative color and sound movie on sheet metal in building construction was shown by G. J. Gamber, of Revere Copper and Brass, Inc., Detroit. The film explains the behavior of copper under stress, describes the research work on design principles, and then goes into details and techniques of installations, the pictures being taken on the job — or rather, on various actual jobs.

The film stresses the importance of the correct weight and temper of copper, correct location of expansion joints, correct design of the metal section, and adequate strength of transverse joints.

Charles Pesterfield, professor at Michigan State's school of engineering, briefly described the Michigan State short course and said that a new course on servicing is being planned. In introducing Professor Pesterfield, Homer Brundage — chairman of the convention committee — said that the Michigan State warm air short course was the oldest such course in existence.

"Estimating Heart of Business"

"Estimating is the very heart of our business," said U. H. Bowman, chief engineer of the Philadelphia district of the Carrier Corp., following his introduction by

(Please turn to page 110)



It pays to
"Meet the Family"
of the First

sheet metal screw

THE ORIGINAL

PARKER-KALON TYPE A →

For fastenings to light gage (.015" to .050") sheet metal. Also made in Stainless Steel (18-8). The favorite of fastening-wise sheet metal men for over 30 years.



P-K TYPE Z* For fastenings to light and heavy gage sheet metals (.015" to .200"). Also made in Stainless Steel (18-8). The right combination of hardness and toughness in every screw. * A. S. A. — TYPE B

P-K HEX HEAD TYPE Z* For fastenings to light and heavy gage sheet metals (.015" to .200") and structural steel (.200" to $\frac{1}{2}$ "). Has many applications in fabricated steel buildings. * A. S. A. — TYPE B

HARDENED P-K SCREWNAIL For fastening sheet metal to wood. Screw strength and nail speed in one fastening. Hardened, it pierces metal that would bend ordinary nails—has 4 times the holding power.

HARDENED P-K MASONRY NAILS For fastenings to brick, mortar, concrete, etc. Drive them with a hammer in a drilled hole of proper size—drive without holes in softer masonry. Quicker than lead anchors and expansion bolts. Hold securely, cost less.

There are still *more* P-K Fastening Devices that are just right for certain jobs. Be sure you know them all—start making savings you've missed.

DELIVERIES ARE BETTER . . . SPECIFY P-K



GET COPIES OF BOOKLETS
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"**HOW TO USE**" booklet tells "where to use what" type of screw in all kinds of sheet metal. Gives complete information on application.

SCREWNAIL and MASONRY NAIL Booklet tells how these popular fasteners can save you money. Ask your P-K Distributor for Forms 480 and 412, or write Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

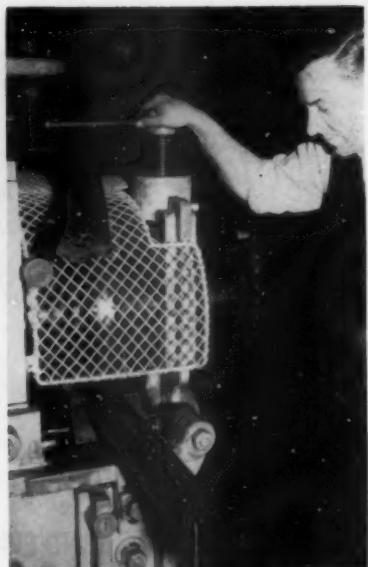
PARKER-KALON

The Original SELF-TAPPING SCREWS

AND OTHER FASTENING DEVICES



LUNCHTIME in front of one of London's largest sheet metal plants



HEAVY 18 GAGE, OG gutter is formed in this machine in 72 in. lengths and then galvanized

English Sheet Metal Work Is Different

. . . an American contractor finds. He says it

By Lawrence E. Gichner
Sheet Metal Contractor

- takes longer
- lasts longer

TWO DOMINANT IMPRESSIONS linger with me after visiting English sheet metal shops — their production methods are "archaic" compared to ours; however, they produce a more lasting product than do we in America.

The latter may be a blow to our ego — but who in this country has heard of spout heads made of iron plate and then welded, roof ventilators fabricated of black iron and then galvanized, or ordinary house gutters constructed of 18 and 20 gage iron? Such procedures may seem very unusual to us, yet what I report, I myself saw, felt and examined.

While in England I wanted to meet and visit with those in the roof repairing business. "Who repairs your roof?" I asked my host, the owner of a fashionable residence. "Why, we have lived in this house for 27 years, and to the best of my knowledge the roof has never been repaired," he replied. My inquiries to other home owners elicited the same response. "In the 32 years

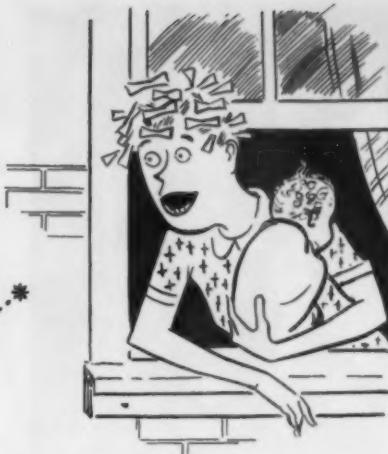
that I know of, it has never been fixed," one replied, and then wanted to know why I asked.

"In America," I said, "there are thousands engaged, like myself, in the business of maintaining roofs, but they would quickly starve to death here for there apparently is nothing for them to do—you build too well." I explained that many of the gutters and spouts erected in America have to be replaced on an average of once every 15 years, and some repairs, though minor, have to be made to the roof at least once in three or four years. This work keeps thousands busy in every large city in America, I said, asserting that in England I had been unable to find a single person employed in roof repair work. We build faster, but they build better, I feel.

Now, I'm not so foolish as to think that there are no roofers in England engaged in repair work, or no roofs that need repairing, but I do know that my conscientious efforts to locate any by word of mouth or through the



**EVERYBODY'S
TALKING
ABOUT
ECONOMY***



WHAT ALL THE SHOUTING'S ABOUT is International Economy's great new line of furnaces—biggest in Economy's 111-year history. Oil...gas...coal—whatever fuel your customers want to use, Economy gives you the models and features to sell and satisfy every customer!

WORDS can't begin to describe the profit possibilities in International...the solid customer acceptance that makes your selling job easier...the experienced engineering skill behind Economy units meaning easier installations...top performance—fewer call-backs—bigger profits! But talk is cheap...make us prove it!

See your distributor—or write: Dept. A-17.

International Heater Co., Utica 2, New York.

* **International
Economy®**

Here's why
they'll buy
new
assembled

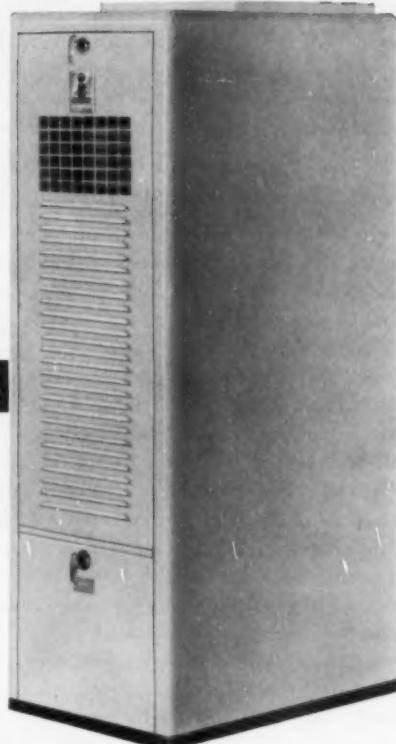
GAS HI-BOYS

MODELS **GH-65**

GH-82

GH-100

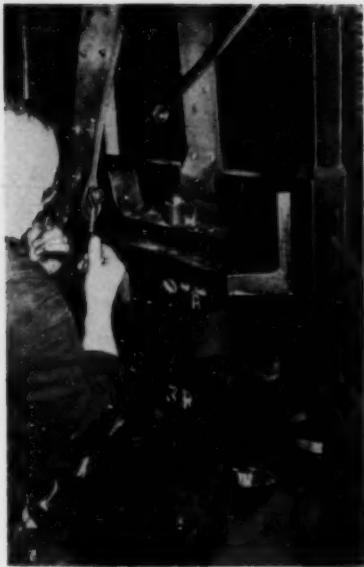
- 10-YEAR WARRANTY on Heating Element and Casing!
- Completely Assembled and Wired at the Factory.
- Ratings up to 100,000 Btu. Input.
- AGA approved for 1" Clearance—Easier Installation.
- Meets Supplemental Utility Requirements.
- Removable Pilot Burner Assembly.
- Handsome Heavy-Gauge Cabinet.
- Available with or without vestibule.
- Easily converted to oil.



INTERNATIONAL
Heater Co., Utica 2, N.Y.

The Finest in Home Heating

since 1842 . . .



THE RAM on this stamping press for making gutter ends is pulled up by hand and then released



THESE ROOF VENTILATORS are first fabricated in black iron and then galvanized. Black iron is seen in the back; galvanized, in the front

telephone directory were unsuccessful. Yet, when one sees the firm and rugged manner in which spouts and gutters are fabricated and erected, he can quickly realize why these products are so enduring and can truthfully question why extensive repairs should be necessary.

Gutter Forming Precedes Dipping

It was mentioned before that gutters in England are made of 18 and 20 gage iron. In factories throughout the States, in order to meet the demand for 28, 27, 26 and 24 gage galvanized gutters, it is necessary to perform as many of the operations as possible on machines specifically designed for the fabrication techniques used. In the course of mechanical fabrication where the sheet is galvanized prior to the manufacturing process, there is always the possibility that some of the edges may be exposed to the elements after the gutters have been erected. In England, however, not only is the base metal considerably heavier than ours, but in addition it is dipped in a molten bath of zinc only after it has been formed, thus avoiding any occasion for rust to eat its way into the raw, unprotected metal.

Likewise, the drainage accessories like elbows, end caps and mouthpieces are treated in the same thorough way. They are individually hand dipped with care and scrutiny. This naturally makes goods much more expensive and less available to the masses of the people, but what is made endures.

More Man-Hours, Fewer Machine-Hours

With such thorough processing, maintenance work is reduced to a minimum, for men painstakingly do what

machinery does here in the States. Imagine seeing anyone, anywhere in America, doing the back-breaking job of sitting at a drop press and manually pulling up the ram hundreds of times during the course of a day's work!

Not in the hinterland did I observe such an "archaic" method, but what I saw was in the heart of London, in one of its largest metal fabricating plants. Such procedure is only possible where labor is cheap and plentiful and man-hours cost less than machine-hours.

The English are bound by centuries of tradition that, in the eyes of an American, may seem to be a waste of good time.

Example: While I was chatting with a draftsman in a large plant, a matter arose that he had to discuss with his superior. Did he immediately phone, flick the key of a communication box or slip off his stool and trot right in to see his boss whom he would address by his first name? That may be the direct way in which we normally proceed in America—but in England such a brash performance would be "heresy." First an appointment was made to see if it were agreeable to be seen, then our man rolled down his sleeves, tightened the knot of his tie, combed his hair, put on his coat, regulated his cuffs and then went on his call—not to see the "big boss" but his immediate superior. His father and great-grandfather had acted no differently.

The weather is drab a good part of the year, and to give some color to their lives the English are great ones for gay uniforms. Truly the scarlet coats of the palace guards are eye-catching and stirring, as are the costumes of the popular "beef eaters" at the Tower of London and the liveried footman at one's hotel. But brilliance does not end there, for the attendant that greets one on

(Please turn to page 104)

the Honeywell

ROUND

in only five months . . . America's largest-selling thermostat

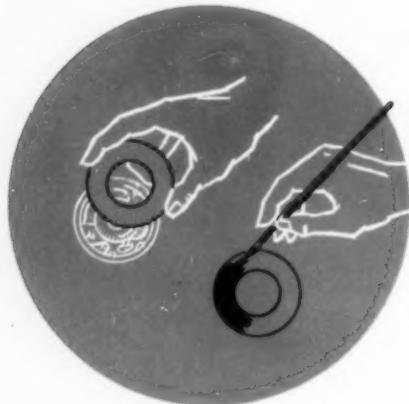


Outmodes all others!

the new Honeywell Round

...taking the nation by storm!

DYNAMIC HOMEOWNER APPEAL . . .

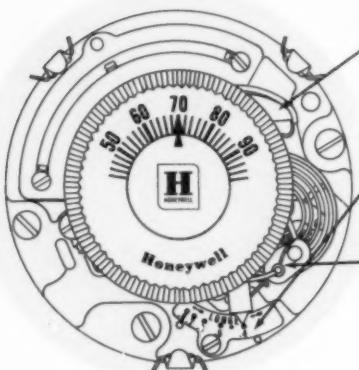


The Honeywell Round offers the first really new idea in thermostats in years . . . new shape . . . new beauty. The simple round design and jewel-like appearance are a complement to any room. Homeowners love it.

Cover ring snaps off for decorating. Exciting new feature is the snap-off cover. It comes in a beautiful silver-bronze finish, yet can be painted by the homeowner to match the color scheme of any room in just a matter of minutes.

BEST MECHANICAL DESIGN EVER

In addition, there are real improvements *inside* the Honeywell Round—a reflection of the engineering skill of the world's oldest and largest manufacturer of automatic controls.



Mercury Switch. A hermetically sealed mercury switch, actuated by the coiled bimetal element, gives positive, quick make-and-break switching. No more service calls to clean dirty contacts.

Adjustable Heater. Your inventory problems are simplified. Featured in this new thermostat is a heater which is adjustable to the current characteristics of most primary controls. It can be set to operate the burner in the timed cycles needed for constant delivery of heat and good temperature control.

Honeywell TM. Honeywell's Time Modulation feature means better performance from your heating plant. TM automatically varies the burner cycles according to the load to assure a smooth flow of heat for uniform room comfort in all weather.

THE HONEYWELL ROUND IS GOOD FOR YOU AND IT'S GOOD FOR YOUR CUSTOMERS

For new installations. Take advantage of the fresh demand of this nationally advertised new thermostat. Make it a feature of the heating jobs you sell. SPECIFY THE HONEYWELL ROUND. Better still, specify a complete, matched system of Honeywell controls.

For replacement business. Use the Honeywell Round as a part of your everyday service campaign. You'll find a new source of profit in replacing old-style thermostats with this sleek new model.



MINNEAPOLIS
Honeywell

MINNEAPOLIS 8, MINNESOTA
TORONTO 17, CANADA



First in Controls

Are Verbal Contract Changes Valid?

**A dealer can impose additional obligations on a buyer
(and vice versa) only if he offers in return
additional concessions or considerations**

By Albert W. Gray



"THAT EQUIPMENT belongs to you until it's paid for. You know it and we know it and it'll stay yours just as if that clause was in the contract," the buyer told the dealer and his salesman. But the dealer couldn't recover possession when the buyer went bankrupt.

A MIDWESTERN DEALER installed four individual year 'round air conditioning systems in a single story office building, under an agreement for payment of a certain sum upon completion of the work and the balance in six monthly installments, the first payable 60 days after completion.

The manager of the heating and air conditioning company hesitated in executing this contract without the usual clause retaining title until payment had been made in full. The president of the purchasing company, however, assured him with a convincing certainty, "There's the first large sum in the bank for you just as soon as the installation's completed."

"I figured," said the dealer's manager later, of the omission of this clause, "that I could take a gamble on the balance which was to be paid in six installments."

Albert W. Gray, author of this article, has had 20 years' experience as an attorney in the courts of New York City. He has written widely on legal matters and is the author of *The Family Legal Adviser*.

The installation was completed and only \$1500 paid. The manager called on the purchasing company and asked what protection he had if the company's business failed to meet operating expenses.

"You've got just the same protection as if you had that title retaining clause in the contract. That equipment belongs to you until it's paid for. You know it and we know it and it'll stay yours just the same as if that clause was there," was the reply.

Soon the purchasing company was bankrupt and the bankruptcy trustee took possession of the equipment. The dealer sued to recover possession, contending that the contract had been orally modified and changed by this understanding with the purchaser and that under this modification the company still owned the equipment until the price was paid.

Must Support Change with a Consideration

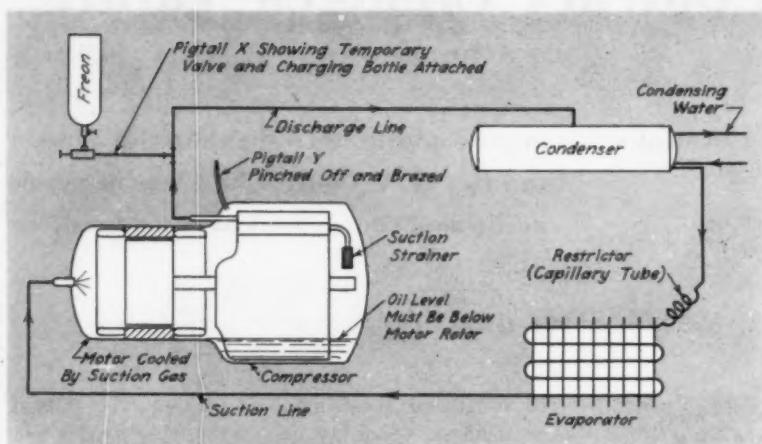
The court decided in favor of the dealer and awarded him possession of the air conditioning equipment. The bankruptcy trustee appealed from this decision and the appeals court reversed the lower court, holding this oral agreement was void and unenforceable. The mere agreement of the purchaser that the equipment belonged to the dealer after the installation contract had been made constituted merely what Daniel Webster called "good advice" when speaking of a law without a penalty.

"It is true," said that court, "that at the time this statement was made a substantial part of the promised initial payment was overdue and also that the forbearance to sue on an overdue indebtedness may constitute a consideration for a new promise or for an additional obligation. Here there was neither an express or implied agreement to refrain from bringing suit on the indebtedness.

"The consideration for the installation of the air conditioning equipment was a promise on the part of the purchasing company to pay a stipulated sum. When the
(Please turn to page 112)

Servicing Air Conditioning Jobs

(Continued from page 73)



2 TO REPLACE the motor-compressor unit in this sealed system, the motor wiring is disconnected, refrigerant is allowed to escape, the compressor is removed, and the new compressor is charged with oil and connected to the suction and discharge lines (inert gas is used as joints are brazed). Then the system is tested for leaks and charged with refrigerant

what is known as the sealed system. All joints are brazed.

Assembling the Sealed System

In spite of its features, the sealed system is not perfect. The hermetic compressor is a component which is vulnerable from the standpoint of wear and mechanical and electrical failure. This month's problem for the service man, therefore, is how to proceed in servicing a sealed system which has no valves nor other easy means of entry into the system.

To establish some background for the discussion, let us study Fig. 2 which shows a sealed system. The system illustrated has a gas cooled motor. Suction gas from the evaporator enters the motor end of the hermetic compressor shell and passes through and over the motor windings on its way to the compressor suction port. The cooling effect of the gas keeps the motor windings from becoming overheated. In some compressors the suction gas does not flow over the motor but is brought directly to the compressor. This type of unit depends upon the

dissipation of motor heat through the shell to the surrounding air.

During the manufacturing process, the components are assembled into the air conditioner and piped. Two "pigtailed" are provided in the system, one at *X* in the compressor discharge line and one at *Y* in the compressor shell. As the joint brazing proceeds, inert gas is allowed to flow through the system, entering at *X* and being released at point *Y*. As described last month, this prevents oxidation scaling on the inside of the copper tubes when they are heated.

When all joints have been brazed, the entire system is evacuated by means of a vacuum pump pulling through pigtailed *X* and *Y*. The use of both pigtailed facilitates the process since both the high and low sides of the system are reached without the necessity of pulling through the restrictor or compressor valves.

After the evacuation is complete, oil is charged into the compressor through pigtail *Y*, after which the refrigerant is charged into the system through pigtail *X*. Both quantities are weighed accurately. The amount

of refrigerant in a system having a restrictor is especially critical. While the oil and refrigerant lines are still attached, pigtailed *X* and *Y* are pinched off with a special tool and cut. The free ends are then brazed to complete the sealing of the system. After all joints are leak tested, the air conditioner is ready for its initial check run.

Field Service Procedure

The factory pinch-offs are usually made far enough out on the end of the pigtailed to allow for at least one, and perhaps two, additional pinch-offs. This extra length gives the service man a chance to make field repairs without undue disturbance of the system. He actually need work only with pigtail *X* in the discharge line. *Y* is used primarily in the factory operation for more rapid production.

Let us assume, for example, that we are confronted with a sealed system in which it has been determined by electrical tests that the compressor motor has become defective so that it will not operate. Field repair of the motor is not possible since it is welded into a steel shell with the compressor. The decision has been made to remove the motor-compressor unit, return it to the factory for repair, and replace it with a new one. It will be assumed that the system has a pigtail at location *X*, at least.

After the motor wiring has been disconnected, the next step is to allow the refrigerant charge to escape, since there is no practical way to save it. To do this, a cut is made in pigtail *X* just below the point where it was pinched. The cut must be small so that the charge will bleed off slowly. A rapid discharge might carry out considerable oil which would have to be accounted for when the replacement compressor was installed.

**There's a
SKUTTLE HUMIDIFIER
for ANY kind of heat**

If you handle the Skuttle line, you don't have to pass up the profit of humidifier sales in **any** home. The Skuttle line is complete. There's a Skuttle Humidifier for any type heat—Winter Air Conditioning—Gravity Warm Air—Counterflow—Low High-boy—Highboy—Floor Furnace—Space Heater . . . Steam, Hot Water or Vapor.

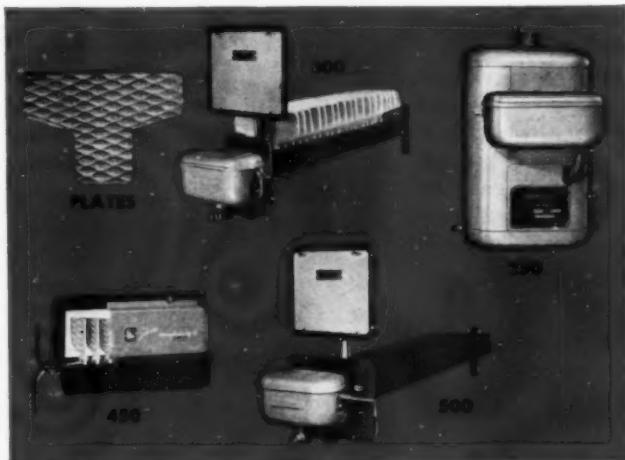
See the complete line below. Each is an efficient, durable, satisfactory unit that you can recommend with confidence.

**See Us At Booth 156
OHI Show, Philadelphia**



Skuttle Series 600

The most popular humidifier for many years. For all standard type automatic fired warm air furnaces, including gravity and winter air conditioning. Easily installed. Self-flushing—self-cleaning. Patented Vapoglas plates for efficient evaporation. Blown glass float—can't leak. Chrome and nickel plated valve parts—aluminum plate rack to eliminate electronic corrosion. Double coated acid and alkali resisting porcelain enamel pan and float chamber.



Skuttle Model 450

For warm air furnaces where space doesn't permit a Series 600. Model 450 can be used if there is 3" space between furnace and casing—counterflow—floor and other furnaces and space heaters.

Skuttle Model 250—Gas Fired

Independently gas fired for steam, hot water and perimeter heated homes.

Skuttle Series 300 for Large Homes

Holds up to 35 Vapoglas plates—for large homes.

Skuttle Series 500 for Coal Fired Warm Air Heat

Needs no plates—for use in high temperature plenums.

Patented Vapoglas Evaporating Plates

Pure glass wool compressed under heat. The most efficient plate you can get. All evaporating plates should be replaced when clogged with water chemicals—about once a year.

When the charge has left, pigtail *X* is cut off cleanly just below the original pinch, and a small valve is brazed into place on the free end. The valve is opened. The system still contains refrigerant, now under atmospheric pressure. Therefore, it is safe to proceed with the necessary heating of the compressor piping joints without danger of internal scaling which would occur if air were in the system.

Replacing the Oil

Once the old hermetic compressor has been removed from the system, the amount of oil remaining in it must be determined either by weighing or, if practical, by actually pouring it out and measuring it. If what remains in the old compressor is less than the amount that should be there (as recommended by the manufacturer), it can be assumed that some oil remains in the system. The amount of oil estimated to be still in the system must be deducted from the total required by the new compressor in order to keep the total oil quantity in the system unchanged. Too much oil in a sealed system with a horizontal compressor may partially submerge the compressor motor, causing the rotor to drag. Excess oil may also lodge in the evaporator where it can cut down heat transfer.

The replacement compressor is charged with the proper amount of oil, as determined above, through its suction connection. This allows the oil to enter the crank case directly. Pigtail *Y* is pinched and brazed if this has not already been done. *X* alone will be sufficient for the field repair.

The suction and discharge lines are cleaned to the bright metal and connected to the compressor. A bottle of dry inert gas such as nitrogen is attached to the service valve we installed on pigtail *X*. While the inert gas is flowing slowly through the system and escaping at each compressor piping connection, the two joints are brazed. The discharge joint should be brazed first so that the nitrogen will be forced

to flow around the system to the suction joint. It cannot pass directly through the compressor very easily because of the discharge valves.

After the brazing is completed, the nitrogen bottle is removed from the valve at *X*. In its place are connected a vacuum pump and gage. The entire system is pumped out to remove such residual nitrogen, refrigerant, and air as possible. When the vacuum gage indicates that the maximum vacuum has been reached, the valve at *X* is closed, and the pump is removed.

Leak Testing

The next step is to add a small amount of refrigerant for leak testing purposes. This is accomplished by attaching a drum to the valve at *X*. In making this connection, it is important to remember to tighten the drum end of the charging line first, then to allow a small amount of refrigerant to escape to purge the line of air as the system end is tightened. The preliminary charge is just enough to break the vacuum and get a slight positive pressure in the system. In addition, the preliminary charge serves to further dilute any contaminating gases that may still remain in the system.

Leak testing is accomplished with a halide torch, the flame of which turns blue in the presence of the "Freon" refrigerant. It is well to check not only the newly made joints but the entire system. Compressor electrical terminals on some makes are potential leak spots if they are not properly tightened. They should be checked carefully.

Assuming that no leaks are found, the vacuum pump is applied once again, and the system is reduced to as high a negative pressure as possible. When this has been achieved, the valve at *X* is closed tightly in preparation for the final step, which is charging.

Charge Must Be Accurate

Refrigeration systems constructed with restrictors are especially sensitive to the amount of charge. The

precise amount must be determined by the manufacturer by means of careful tests. An excess amount will tend toward "sloshover" operation, in which liquid refrigerant reaches the compressor through the suction line. A deficiency of refrigerant causes operation at relatively high coil suction superheat temperatures. Either condition hurts capacity.

The service man who is called upon to charge a restrictor-controlled system must realize that optimum performance requires that charge to be weighed to an accuracy on the order of a fraction of an ounce. A good way to do this is to load a small cylinder with the exact weight required. This should be done in the shop where it can be weighed on an accurate scale. The cylinder is brought to the job and attached to the valve at *X* with a minimum length of charging line. The line must be purged of air and tightened as described previously.

Heat May Aid Transfer

Since the system is under a high vacuum and the compressor is not running, it is safe to charge liquid refrigerant directly into the system. This is accomplished by turning the bottle upside down (valve at the bottom) as shown on Fig. 2. The refrigerant should enter the system without difficulty, but heat may be applied to the bottle to aid the transfer. Incandescent heat is safer to apply than the direct flame of a torch.

After the system has been charged, the valve at *X* is closed tightly, and the refrigerant bottle is removed. Power lines are connected to the new compressor so it can be started and checked for proper operation. If the test run shows that performance is satisfactory, pigtail *X* is pinched off below the temporary valve, the valve is cut off, and the end is re-brazed. The system is now sealed once again and should provide many years of trouble free service for the user.

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Weirton, West Virginia

NATIONAL STEEL CORPORATION

Avoiding Moisture Problems in Crawl Spaces

(Continued from page 75)

supply of moisture appeared to be constant regardless of the depth of the water table. This was true for soils having from 50 to 80 per cent fines (small particles less than 1/480 in. in size) such as silty clay. The water table was from 8 to 20 ft below the ground surface. In addition, there were indications that more severe moisture problems would be encountered in crawl spaces located on slopes than in those located on level ground.

The following are among the recommendations which resulted from the study:

- Ventilation in crawl space walls equal to 2 sq ft per 100 ft of building perimeter plus one-third of one per cent of the building area should be installed and kept in operation.
- Where crawl space floors are covered with 55 lb mineral surfaced roll roofing in an effective manner, the specified wall ventilation may well be reduced as much as 90 per cent for controlled construction.

Durability of Moisture Barriers

Studies on the durability of moisture-resistant membrane materials in contact with the ground have been conducted by the HHFA, and were reported in HHFA's Technical Reprint No. 15. These were accelerated tests of several materials commonly used for moisture barriers, such as 15 lb asphalt saturated felt, and 35 lb, 45 lb, and 55 lb roll roofing. It was found that after 90 days of accelerated exposure to various types of fungus, the 15 lb felt had lost much of its strength and would be ineffectual as a vapor barrier.

This was confirmed by long term tests conducted by the Bureau of Plant Industry at Beltsville, Md. These tests showed that 55 lb roll roofing specimens were still effective vapor barriers after eight years of service, whereas 15 lb felt disintegrated sufficiently to be relatively ineffective as a vapor barrier in three years or less. The long term tests

were conducted with the test materials used as ground cover under crawl space houses under actual exposure conditions.

The following are among the recommendations which resulted from the study on the durability of materials used for moisture barriers:

- Fifty-five lb roll roofing, which is both durable and moderate in cost, is recommended for ground cover in crawl spaces.
- Membranes should always be laid on a well graded surface that will permit good drainage.

Moisture in Heated Space

Crawl space ventilation is not possible when the crawl space is being heated. Consequently, we must rely upon the use of moisture barriers placed on the soil surface of the crawl space for moisture control during the heating season. During the summer the only practical means of controlling the moisture from the crawl space is by ventilation. This ventilation should be closed off in the winter, and the ventilator covers should be insulated in the same manner as the foundation wall.

In order to prevent structural damage to a house from moisture which originates in the crawl space, the recommendations made as a result of the HHFA studies and those outlined in Manual No. 4, *Warm Air Perimeter Heating as Applied to Structures Without Basements* (3rd ed.) of the National Warm Air Heating and Air Conditioning Association, should be followed. Recommended crawl space construction is shown in Fig. 2, and correct practice may be summarized as follows:

- The soil surface of the crawl space should be smooth and tamped, and graded for good drainage if below grade of surrounding yard.
- Roll roofing weighing at least 55 lb per 100 sq ft should be laid over the gravel or stone. The joints should be lapped at least 2 in., but need not be mopped. The moisture

membrane should extend up the foundation wall so that it is lapped with the perimeter insulation which should also be vaporproof.

- Ventilation openings with an area of 2 sq ft per 100 linear ft of building perimeter plus one-third of one per cent of the crawl space ground area should be provided. These openings should be equipped with insulated covers which should be closed during the heating season and open when the heating plant is not in operation.
- The foundation walls should be constructed to minimize moisture penetration, and the construction should be at least equal to that specified in the Minimum Property Requirements of the Federal Housing Administration. The outside surfaces of both masonry unit and poured concrete walls below ground should be given a heavy coat of undiluted hot tar or asphalt or other approved waterproofing compound.
- If the water table in the earth is high, a drain tile should be installed around the outside of the footings. In any case, the outside grade should slope away from the house.

It may not be necessary to follow all of these recommendations in some localities where the water table is very low, the soil is rocky or sandy, or the climate is dry. Although local practice will be governed largely by local FHA requirements, the steps taken to control crawl space moisture should be determined by judgment even though they may exceed those required. Since excessive moisture in a home will usually be blamed on the heating system even though preventive measures were neither specified by the architect nor by the builder, it is wise for the heating dealer to recommend strongly that proper construction methods be used.

Wood Shrinkage

Changes in moisture content of the air can cause expansion and contraction of the wooden members of the



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Philadelphia—May 16-20

house. This may show up as sticking windows, warped timbers, and buckled floors. Many of these symptoms show up during the summer, when the moisture content of the air is higher than during the rest of the year. This would indicate that the wood in the house absorbs moisture from the air around it.

Studies conducted by the U.S. Department of Agriculture show that this is the case. For instance, when Sitka spruce is exposed to air at a temperature of 70 F and a relative humidity of 30 per cent, the moisture content of the wood will be approximately 6 per cent. If the relative humidity of the air is increased to 60 per cent and the temperature remains at 70 F, the moisture content of the wood will increase to 11 per cent. (These figures are given in *Relation of Moisture Content and Drying Rate of Wood to Relative Humidity of Atmosphere*, U.S. Department of Agriculture Forest Service, Forest Products Laboratory, No. R509, revised May 1941.)

The effect of wood moisture content on shrinkage of wood is shown in the accompanying table for four species of wood from the green condition to each of three dry conditions. If green lumber is used in the floor substructure and the wood is

EFFECT OF MOISTURE content on shrinkage of wood

Species	Shrinkage (Per Cent of Dimension when Green) from Green to:					
	Air Dried (12 to 15 per cent moisture)		Kiln Dried (6 to 7 per cent moisture)		Oven Dried (0 per cent moisture)	
	Radial	Tangential	Radial	Tangential	Radial	Tangential
Douglas Fir	2.1	3.6	3.2	5.4	4.2	7.2
White Oak	2.7	4.6	4.0	7.0	5.4	9.3
White Pine	1.3	2.8	1.9	4.3	2.9	5.7
Sitka Spruce	2.2	3.8	3.2	5.6	4.3	7.5

Note: Radial shrinkage may also be called edge-grain shrinkage. Tangential shrinkage may also be called flat-grain shrinkage. Longitudinal shrinkage will be less than 0.5 per cent.

This table is taken from Table 43 of *Wood Handbook*, U. S. Department of Agriculture.

later subjected to the drying action of crawl space heating (equivalent to 6 per cent moisture content), then the flat-grain shrinkage could amount to 5.4 per cent. However, if kiln-dried wood is used originally (having a moisture content of 6 per cent) and the wood is then subjected to summer moisture conditions (equivalent to a moisture content of 12 per cent), we can deduce from the table that the shrinkage would be more of the order of 5.4–3.6, or only 1.8 per cent. In other words, by using well dried wood to begin with as contrasted with using green lumber, the shrinkage can be reduced to one-third as much.

From a practical standpoint, there-

fore, a few significant factors stand out:

- Well cured wood should be used for the construction.
- A vapor barrier must be provided to prevent moisture from evaporating from the ground.
- The crawl space must be well ventilated during the summer to prevent a moisture buildup in the space.
- The crawl space air temperatures for crawl space plenum systems must be maintained at a relatively low rather than a high level. This means that the air flow rate must be reasonably high, perhaps equal to that for a temperature rise through the furnace of only 80 F instead of 100 F; and the fan switch cut-in setting must be low, perhaps of the order of 100 F.

Atom Will "Balance Energy Books"

A. C. MONTEITH, vice president in charge of engineering, Westinghouse Electric Corp., told delegates attending the recent annual American Power Conference in Chicago that only by developing commercial atomic power can the world replace its fast diminishing fuel resources and "balance the energy books."

Using a method of Palmer Putnam, consulting engineer to the Atomic Energy Commission, Mr. Monteith pointed up the world's energy requirements in terms of heat equivalent. "It has been estimated that the world burn-up of energy from the year 1 A.D. to the year 1860 was between six and nine energy units," he said, using one billion billion (1,000,000,000,000,000,000) Btu as one energy unit. "In the 87 years between 1860 and 1947, the world used four more energy units — roughly half the amount it had consumed in the preceding 1860 years. The present world consumption is two-tenths of one unit per year — a 400 per cent increase over the average rate of energy used in the period 1860 to 1947. Since energy consumption has been rapidly

accelerating over the past 100 years, it seems reasonable to expect a still further increased rate of use in the future.

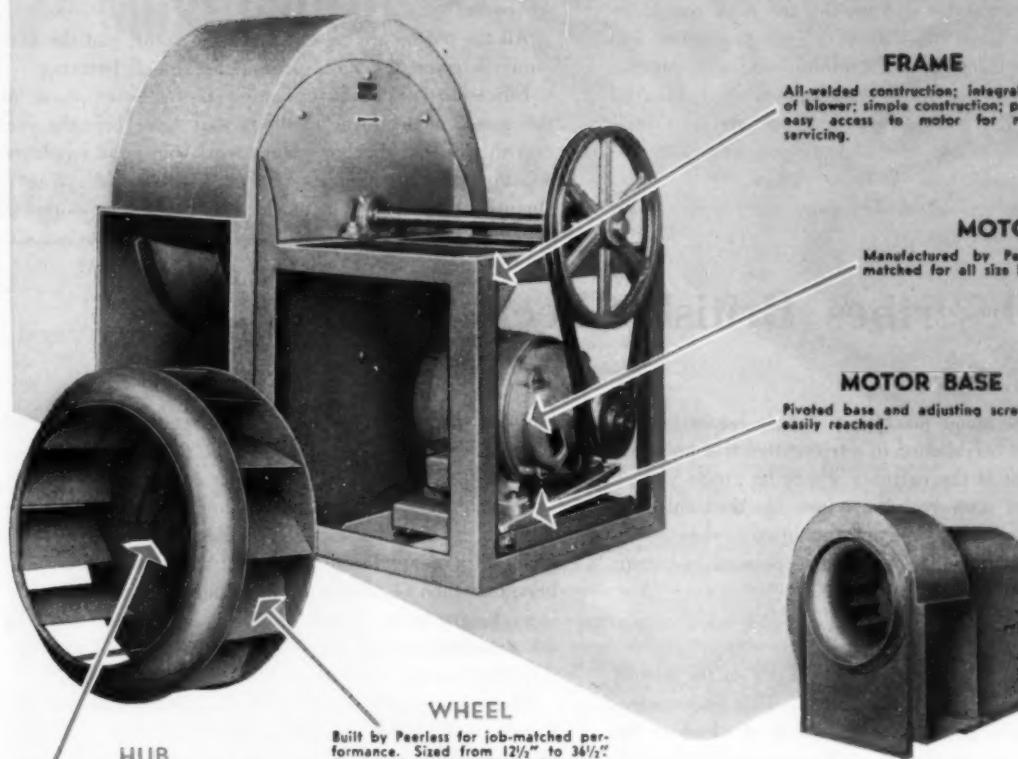
"The world will begin to consume one energy unit annually beginning about the year 2000. By 2050 the world may find itself burning something like five to 10 units (five to 10 billion billion Btu) per year."

Mr. Monteith said existing energy sources, such as coal, petroleum and natural gas, all will be good as fuel sources for some years to come, the rate of depletion depending upon the use made of such sources. "However," he added, "conventional energy sources will not be adequate to supply the yearly consumption predicted. Where, then, is future energy to come from?" He suggested that the greatest hope lies with energy from the sun or from the nucleus of the atom. Solar energy is not an early prospect, he said, but atomic energy is. Pointing to the reactor being built for a civilian atomic power plant, he said that the designed gross heat output will be 900,000,000 Btu per hr.

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Dealer Keeps Truck Costs Low

(Continued from page 77)

paring to buy a new one without delay. In accounting, it figures depreciation of trucks carefully into each year's expenses.

Make Best Use of Time and Space

In addition to all these cost-cutting methods, the firm is alert to other methods of getting the most out of its truck fleet. Because there is careful organization and routing, service trucks spend a minimum of time moving between calls. The use of other trucks is carefully planned in advance. This enables the firm to operate on a minimum number of trucks and at the same time save unnecessary wear and tear on those it has.

City & Suburban also makes good use of the advertising space on trucks.

"Since we concentrate on new work," says Mr. Waner, "we don't want to list a lot of the different types of work in sheet metal and heating that we may occasionally handle. Instead, we want to impress our name, address and phone — especially our name — strongly on the people who are our prospective customers. Our firm name itself describes the work we do and the area we cover."

All the trucks are an attractive red color, and the firm name is given the most prominence in all lettering.

Efficient truck fleet operation is just one phase of the good management methods that have brought success to City & Suburban. Hard work and good employee relations are other success factors cited by Mr. Waner. Quantity buying also helps the firm meet price competition.

Describes British Sheet Metal Methods

(Continued from page 92)

entering a sheet metal machinery supply house is likewise decked and beribboned in a trim, attractive uniform. He has a station at the entrance where he greets you — and to him you state your business. He then calls the proper party or parties. Even the brakes, shears and hand tools — though like ours — are painted in bright, light colors.

Firm Does Much Copper Roofing

The shop illustrated in this article is one of the largest in London — Fred Braby & Co., Ltd. This firm undertakes much copper roofing work, typical of which is the job carried out on the domes of Westminster Cathedral. The four domes on the main roof were originally con-

structed in concrete and left unprotected. It was found that water was penetrating, and the company's job was to make the domes watertight with copper.

In another contract, the old roof covering over the Edinburgh City Observatory had to be stripped, the framework cleaned and reinforced with additional members, and then covered with hardboard and copper sheeting. A very large copper roofing installation (40,000 sq ft) was also carried out at the headquarters of the Nottingham County Council.

The company, of course, works with many other metals. For example, it has erected numerous aluminum shelters on the sidewalks of London to afford protection from the drizzle and help people form orderly bus queues.

Sees Cooling

SALES DURING 1953 of central residential air conditioning equipment (designed to cool all or the major portions of homes) amounted to about 50,000 installations. According to Irving P. Sharpe, manager of product planning, home heating and cooling department, General Electric Co., the 1954 figure will reach 120,000. He was speaking at a recent meeting of the Illinois chapter, American Society of Heating and Ventilating Engineers.

Mr. Sharpe pointed out that in various parts of the country water shortages have resulted in restrictions on the use of water for air conditioning. The solution to this problem, he said, will probably be in the use of cooling towers or air cooled condensers. In regard to air duct sizes, the speaker mentioned that in the southern part of the country, ducts are sized for the cooling load

Boom in '54

(which requires more air than does heating), whereas in the northern part of the country, ducts sized for heating are usually adequate for cooling. Where the heating ducts are not adequate for cooling, he recommended the addition of extra runs and registers as required rather than revamping the entire duct distribution system.

Lawrence H. Hirschbach, manager of builder sales for the company's Bloomfield, N.J., office, stated recently that year-round air conditioning for private homes is definitely within the reach of the average home purchaser. Speaking at the American Power Conference held in Chicago, Mr. Hirschbach gave "\$800 to \$1000" as a rough estimate for installation costs and \$10 a season as operating costs for a home air conditioning system.

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less SPACE
less LABOR
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WILLIAMSON Assembled Warm Air Furnaces and Summer Cooling Units make it easy for you to stock, sell and install for year 'round profits. These quality *low-cost* units give you more benefits per square foot than any other line.



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Assembled (Gas or Oil) Warm Air Furnaces	60,000 to 145,000 BTU	32	Hi-Boy, Lo-Boy Counter-Flo Horizontal
Summer Cooling Units	2, 3 & 5 ton Air & Water-Cooled Condensing Units.	12	Basic Basic with Blower Space Unit Horizontal

Increasing Markets in Metal Roofs, A. C.

(Continued from page 84)

excess heat. A $\frac{1}{8}$ in. groove directly under the joint lets the weld area itself become well heated. Bracing bars on the top must be placed within about $\frac{3}{8}$ in. from the joint. Bars with beveled edges leave more room to work.

Mr. Rains explained that with oxyacetylene welding, there is danger of distortion because of the high heat input. Other methods are usually preferred. Proper flame is important for weld strength, corrosion resistance and finished appearance. A slightly reduced flame should be used.

A special flux is required for oxyacetylene welding. It is mixed with water in a non-metallic container, and applied with a small brush. With 14 gage steel or heavier, edges should be spaced apart by the thickness of the metal. For 16 through 20 gage, edges should be butted; with 22 gage and lighter, a flange-but weld is used without filler rod.

Metal arc welding is more commonly used on 20 gage and heavier. It is faster and causes less buckling though it makes a heavy bead, raising finishing costs, Mr. Rains said. About 20 per cent less current is required than with mild steel because of the low heat conductivity and high electrical resistance. Either a-c or d-c power can be used. To start the arc, the electrode is touched against the material and then withdrawn a short distance. The electrode is fed continuously and moved rapidly. The arc is kept as short as possible.

"The inert gas-shielded arc method is especially good for welding both light and heavy gage stainless," Mr. Rains said. It allows close control and makes a small even bead. No flux is required. A filler rod can be used as needed. Proper bracing and heat removal are still important."

Mr. Rains went on to describe methods by which a shop can increase its stainless steel business. He suggested that the dealer himself think more in terms of being a sales outlet for stainless steel work. Success with stainless steel requires that the dealer go out and sell rather than wait to be called in to bid, he said.

Mr. Rains suggested a number of steps which might be taken to organize a shop for increased stainless volume: 1) Get the facts on stainless steel — grades available, etc.; 2) make the shop the "stainless steel sheet metal store" of the town (this may mean changing or rearranging show windows, etc.); 3) maintain an outstandingly clean, neat shop so that the steel will not be lying around where it may be marred; 4) set up adequate cost records, since rule of thumb cost figuring is "definitely not applicable to stainless steel;" 5) sell all employees on stainless steel, making each one a salesman for the product; and 5) advertise as the stainless steel headquarters of the town.

"The future for custom stainless fabricators is a bright

one. Stainless work can contribute to the reputation and success of any shop. It's profitable, interesting work — work that the shop can handle," Mr. Rains concluded.

More Business through Associations

Joseph D. Wilder, executive secretary, Sheet Metal Contractors' National Association, spoke on the advantages of being a member of a sheet metal contractors' association. He said that an association permits a contractor to achieve certain desirable goals that could never be reached by any one individual. As an example, Mr. Wilder cited the results obtained in Washington, D. C., where the architects of that city had formed the habit of writing into the steamfitter's specifications certain requirements that only the sheet metal contractor could meet. The Washington association conducted an educational campaign that called for distributing manuals prepared by the national association to every architect in the area. These manuals, entitled *Standard Practice in Sheet Metal Work*, outline in detail the work that the sheet metal contractor is qualified to perform. The result of this campaign is more work for the sheet metal contractor, who is doing the work more cheaply and rapidly.

Another case similar to this was in St. Paul, where the local sheet metal contractors put this manual into the hands of every architect in the Twin Cities area. Mr. Wilder pointed out that the manuals are free to any association desiring to conduct similar programs.

Mr. Wilder also described a situation in one city where associations have more than proven their worth to both the responsible contractor and the public. A situation had arisen that made it profitable for a number of "part-time" heating installers to make abbreviated air distribution systems. The contractors, through their associations, were able to prevail upon the city officials to pass a licensing ordinance that required all installers of heating systems to obtain a city permit, and provided that all contractors must be licensed to apply for the permit. To obtain a permit it would be necessary to pass an examination.

Mr. Wilder cited numerous other cases in Port Chester, N. Y., New Orleans, Bloomington, Ill., Nashville, Los Angeles, St. Charles, Ill., and Rochester, N.Y., where problems of contractors had been solved through membership in an association.

New Processes Promote Metal Roofs

A recently developed manufacturing process that makes it possible to produce sheets of galvanized iron that can be drawn and braked into forms previously avoided because the zinc coat would flake off (resulting in prema-

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C. G. HUSSEY & COMPANY
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ROLLING MILLS AND GENERAL OFFICES
PITTSBURGH 19, PA.

ture deterioration) was explained by Ray P. Farrington, Potts-Farrington Co. The processed sheets, described by Mr. Farrington, are obtainable in standard, deep drawing and extra deep drawing types. The metal is especially suited to roofing applications and will soon be available in either primed or finished rolls.

"I believe this will provide a boost for prefabricated housing," Mr. Farrington stated, "as well as for the mass building of dwellings, since it will take away some of the monotony of sameness now so common in roof colors. There is already a trend to the use of varied colors for roofs just as there is for automobiles. I can imagine that the housewife in a few years will give just as much thought to the exterior colors of the roof as she now does to interior decorations.

"It is likely that the new style of metal roof will appear in the shape of wood or slate shingles, and in colors common to these types — slate gray and the straw color of freshly applied cedar shingles. Also a pale green resembling the patina of weathered copper will appear as will the dark brown of weathered wood shingles. The only one of these colors that will absorb much heat from the sun will be the dark brown. I am inclined to believe the light or pastel shades will predominate because of the heat absorption factor involved," Mr. Farrington said.

He pointed out that the under side of this new type of roof would be coated with aluminum paint to keep the radiant heat inside the building during the winter as well as to protect the zinc from oxidation caused by condensation of moisture on the inner side. The roof should be designed to permit the space between the metal and its supports to "breathe" and thus to permit any condensation that may occur on the under side of the metal roof to escape to the atmosphere.

"My associates and I have made a search of expired patent rights which discloses that some excellent designs and applications patented many years ago are now available to anyone interested in their use," he said. "The potential field for use of such roofing techniques is enormous, probably in the neighborhood of \$1 billion per year based upon the building of a million new homes per year and the re-roofing of 2 million older homes. This assumes that only 1 per cent of the homes use metal roofs.

"It is my hope that some of you may be interested enough to apply your years of practical experience and assist in the design of a product that will provide the most attractive, durable and economic roof ever to be put on a dwelling," Mr. Farrington concluded.

Keeping Accurate Employee Records

The importance of keeping accurate employee records was pointed out by Robert H. Meeker, head of the Unemployment Compensation Division of the Pennsylvania Manufacturers' Association, when he outlined some of the expenses involved when released employees file a claim for unemployment compensation. Mr. Meeker said that

every state has an unemployment law and each is different. Over \$100 million was paid out in 1953 to satisfy approved claims.

It was recommended that a contractor should not hesitate to appeal every application made by a former employee if he feels the claim to be unjustified. The only claim that should never be contested is one in which the employee contends that he is not qualified to fill the job from which he was released. Mr. Meeker said that to his knowledge no appeal application against an original award in this type of case had ever been successful. He suggested that in every case where the contractor appeals the referee's decision, it is advisable to accumulate as many facts as possible and present them in a systematic manner to substantiate the reasons for contesting the award. Evidence that is effective consists of witnesses, facts, records and written statements of disinterested parties.

Industry's Goal — More Year 'Round Comfort

The six functions of air conditioning were defined by William C. McMichael, Bryant Air Conditioning Corp., who explained that no home could be considered "completely air conditioned" until the installed equipment performed each of these functions and in the proper degree for the specific application. Mr. McMichael listed these functions as air movement, cooling, heating, filtering, humidifying and dehumidifying. Continuing his theme that the industry has only one responsibility to its customers — providing complete year 'round comfort — he called for a revision of the general term "air condition." This term should be used to describe only equipment capable of performing all six requirements, according to Mr. McMichael.

Discussing the market and its potential, Mr. McMichael said that the residential market for complete year 'round air conditioning should be capable of doubling each year for the next four years. He said that if an unforeseen event were to greatly reduce the number of new houses built, the modernization market could very well be developed to a point where it could make up for any decrease in the new house market. He continued, "The sales leads for the modernization market can be found in every dealer file — all you need do is look back over your sales records of 20 years ago and pick out those people who bought gravity furnaces. Call on them and talk year 'round comfort. These people have paid off their mortgages and have the capital available for modernization; show them how to modernize the comfort way with air conditioning equipment that performs all six functions."

Mr. McMichael also emphasized the advantage that year 'round air conditioning can offer older people who have suffered from heart trouble. He said that science has found that the heart must work many times harder when the temperature is 90 F than when it is between 70 and 75 F. It then stands to reason, he said, that air conditioning can contribute to a much longer life.

Many Factors Aid Dealer Success

(Continued from page 88)

N. J. Biddle, secretary-treasurer of the association. "Many of the estimating techniques in use today need radical revision and rationalization," he continued. He reported that stop-watch studies and re-estimates of completed jobs led to the development of an estimating manual, which has been used with success by his company all over the U.S.

He summarized the faults of estimating duct costs on the "cents per pound" basis as being due to:

- 1) Inaccurate data on weights of metal (for example, weights at the loading dock often include material other than ductwork.)
- 2) Varying labor rates.
- 3) Complications of the ductwork.
- 4) Too much of the method depends upon "sweeping guesses."

He then described a duct estimating chart which assigns the work of take-off to technicians (not engineers), thus conserving engineering time. As field erection figures vary considerably, it provides that an experienced estimator choose the proper multiplier. Such judgment need be applied only after the base take-off, however.

E. A. Scott, Jr., of the Edwin A. Scott Publishing Corp., gave some highlights of a survey made last fall based on questionnaires returned by sheet metal contractors. An average of 93 tons of black iron and 58 tons of galvanized sheets are used in each Michigan shop annually, according to this study.

The survey also indicated that welding is the fastest growing metal fastening method, that 25 per cent of the shops in the U.S. handle water heaters, that 47 per cent of the shops in the country have salesmen (with an average of 1.9 salesmen per shop), and that 20 years is the average age of the shops in the U.S.

Too Many Phone Book Listings?

At the business session of the convention, Mr. Oole reported in some detail on the efforts of the association with the telephone company to reduce the number of listings in the classified "yellow pages." Association members feel that there are too many classifications, and that perhaps a listing under "Heating Contractors" only would be desirable. Listing heating contractors under "50 or more" possible listings that the phone company seems to want is comparable to listing a florist under "Tulips," under "Violets," and under every other kind of flower he sells, Mr. Oole remarked.

It was also reported that two salesmen had posed as city inspectors in Grand Rapids to gain admittance to homes in order to try to sell furnaces. The association is following the matter to see what action the city may take.

Reciprocal licensing was discussed, and Mr. Oole said this would progress more rapidly if the various codes could be made more uniform.

Election of officers of the association was reported in the April Artisan, and the talk on cooling by T. H. Smoot was published therein. The new officers of the Traveling Salesman's Auxiliary of the Michigan Heating and Sheet Metal Association are Earl Neuville, New-Aire Blower Co., president; Don Sutherland, Auto-Flo Corp., vice president; Frank D. Robert, Detroit Safety Furnace Pipe Co., secretary; and Perce Myers, Star Steel Supply Co., sergeant-at-arms.

HOW SBA SERVES BUSINESSMAN

THE PUBLICATION, Small Business Administration — What It Is, What It Does, is now available for distribution. The brochure describes the organization of the agency, also its prime objective of providing technical, managerial and financial assistance at the local level through its 30 field offices, to help solve the small business owner's problems. It explains each of the major SBA programs — financial assistance, procurement assistance, and management and technical assistance. In the section on financial assistance, information is given on the Loan Policy Board, which is responsible for developing the general policies under which SBA authorizes both business and disaster loans. SBA's other continuing activities designed to foster and encourage small business also are explained. These include assistance in getting small business a fair share of materials and equipment, providing information on the thousands of inventions owned by the government, and making available a Specifications Directory listing some 500 places where small firm owners may inspect files of standard government specifications.

The pamphlet may be obtained free of charge at any SBA regional or branch office.

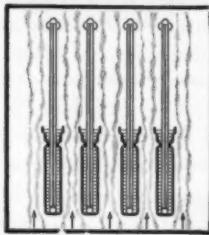
BUILDERS USE MORE STAINLESS STEEL

THE USE of stainless steel in the architectural field was up 47 per cent in 1953, according to Richard E. Paret, stainless steel specialist for American Iron and Steel Institute. This increase, he said, was due to the growing use of stainless steel in store fronts and building entrances. The consumption in 1951 was higher than in 1952 due to several large projects that were being built. In 1953, with virtually no large single construction jobs under way, the annual use of stainless steel was confined to smaller store fronts and similar applications — yet the final total consumption was far ahead of that for all previous years.

no plenum too small for the CONVECTOR HUMIDIFIER!



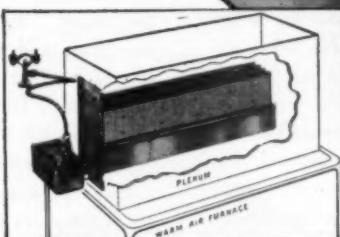
Patented Evaporator Pads are constructed of corrugated long grain paper fillers with outer layers of asbestos. The corrugations form capillary tubes which greatly increase the water absorbing qualities of the pads.



Note above how Maid-O-Mist's exclusive individual trough design allows the air to flow freely up between the evaporator pads. The entire area of each of the large evaporator pads is in direct contact with the warm air flow thus providing 30% more evaporating surface.

- Unlike ordinary warm air furnace humidifiers, this Maid-O-Mist Convector Humidifier has no flat bottom to block the flow of warm air. Maid-O-Mist's individual $\frac{3}{8}$ " copper water troughs are spaced 1" apart to allow unrestricted air flow between the evaporator pads. This exclusive design provides greater evaporating working area so necessary in short cycle modern heating. That's why Maid-O-Mist Convector Humidifier is ideal for the small plenums of all modern warm air furnaces.

View at left, shows the back plate extended to illustrate the individual trough construction. Entire humidifier is made of non-corrosive metals—copper and brass. 6 feet of $\frac{1}{4}$ " O.D. copper tubing with saddle valve for water connections is also furnished.



This view shows why installation time can be reduced by 50%. You just cut opening in plenum and make water connections. 13 sizes available with evaporation capacities of 1 to 10 gals. of water per day. Get full information on these competitively priced units from your jobber or write for Bulletin 701-B.

60%
less air restriction in plenum
30%
more evaporation area
50%
less installation time



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WATER LINE CONTROLS . HEATING SPECIALTIES

MAID-O-MIST, Inc.

3217 NORTH PULASKI ROAD . CHICAGO 41, ILL.

Will Contract Changes Hold?

(Continued from page 95)

contractor performed its part of the contract the obligation of the purchasing company to pay this sum matured.

"This obligation the contractor had the right to enforce according to its terms, but it could not create a new obligation or acquire any rights under the contract without a supporting consideration, and even if the statement of the purchasing company may be regarded as a promise to retransfer title to the heating company, it is unenforceable because not supported by a consideration."

The court then referred to the statement of this rule of law made by a well known legal authority. "A subsequent contract which is to operate as a modification of a prior contract must itself be supported by a sufficient valuable consideration. If a contract has been performed on one side in full, a modification of such contract — whereby the original liability of the party who is still to perform remains unmodified but an additional liability is imposed upon him — is invalid unless a new consideration supports such new promise."

Additional Liability Unenforceable

A simple instance of the application of this rule occurred in a lawsuit in one of the southern states for the price of a piano for which the buyer had agreed to pay \$550 — \$100 down and the balance in 18 monthly payments. Several months after the piano had been delivered, the buyer complained that the instrument was unsatisfactory. The seller agreed to make the necessary repairs and put the piano in condition if the buyer would pay two of the past due notes, with the further understanding that if then she found the piano unsatisfactory it could be returned by her and the unpaid balance cancelled. The buyer two months later notified the seller that the piano was unsatisfactory, that it was being returned pursuant to this agreement and that no further payments would be made.

In the suit brought by the seller for the unpaid balance the court held the buyer must pay irrespective of this oral modification of her contract.

"The only question is whether or not the agreement permitting the return of the piano was one supported by a sufficient consideration to render it enforceable. The only consideration was the payment of two notes, past due under the terms of the original agreement and which the buyer was obligated to pay anyway. At the time of the making of this alleged oral contract the buyer had no defense to these two notes, which were paid and the payment of a past due obligation is no consideration that will support this modification of the original agreement."

Verbal Agreement Doesn't Often Hold

A more detailed statement of this rule of law was made by a court in a suit involving automatic stokers sold

under a contract for \$5591.50. After this contract had been signed, the seller assured the buyer that he guaranteed that the stokers would be satisfactory and that this oral guarantee should be a part of the original contract. In holding this guarantee unenforceable the court in its decision of this suit for the price of the stokers said of this guarantee interposed by the buyer in his defense,

"Although it is contended that a written agreement may be changed after its execution by a parol [verbal] agreement, as a general proposition of law this is against the weight of authority. It certainly cannot be done except in exceptional cases upon a valuable consideration."

Variety of Concessions Could Validate Change

Nevertheless a supplementary agreement such as the one the air conditioning dealer previously mentioned made in reference to the installation contract with the building owner might have been an enforceable agreement had there been an additional consideration for the promise that title to the equipment should remain in the seller until payment was made in full. An extension of time for the payments to be made under the original agreement would undoubtedly have been sufficient as would any similar concession by which the buyer would receive some benefit in return for the agreement for the modification of the purchase contract for the reservation of title.

Suit was brought on two promissory notes that had been given in the purchase of an oil heating system in a transaction of this character. The contract contained no provision that the system would be satisfactory to the buyer. An oral agreement was made between the purchaser and the seller to that effect, with the further stipulation that this modification should be a part of the agreement. The buyer however, in consideration of this agreement by the seller gave the seller the note due under this contract in advance of the date set for so doing.

Later in a suit to recover on this note the buyer in his defense set up this agreement, stating that under the modification of the sales contract the heating system had been guaranteed by the seller to be satisfactory. The court, in holding the modification under these circumstances to be binding and enforceable said:

"There can be no doubt that the written contract could be modified after its execution by an oral agreement based upon consideration. The giving of the note before the time called for by the original contract was a sufficient consideration for the modification, thus adding an agreement that the system or work should be satisfactory to the buyer, and if not, that he might refuse payment."

[Note: While this discussion applies to actual cases, it should be remembered that legal rules vary in different states.]

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Hottest Line on the Market!

One look should tell you—Norge Heat's the line! But if that's not enough, take a second look—and see for yourself why it's the *Hottest line on the market*. For instance—



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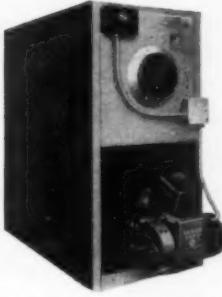
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Fully automatic winter air conditioner. Unusually compact—80,000 Btu size takes only 19" x 20" floor space; 100,000 Btu size only 20" x 20".

OUTSTANDING HEAT EXCHANGER ASSEMBLY



RUGGED
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Extra heavy construction—exceptionally compact. Easy to sell—lowest prices in Norge Heat history. Fine quality features throughout.



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For homes without basements or with limited basement space. Only 19" x 20" in 80,000 Btu size. Shipped assembled. Priced to sell.



A Norge Heat exclusive! Specially designed precast combustion chamber factory installed, with heavy gauge wrap around heat exchanger. Complete assembly engineered for top combustion efficiency and maximum transfer of heat. Makes conversion to gas easy and inexpensive—and with no loss of output!

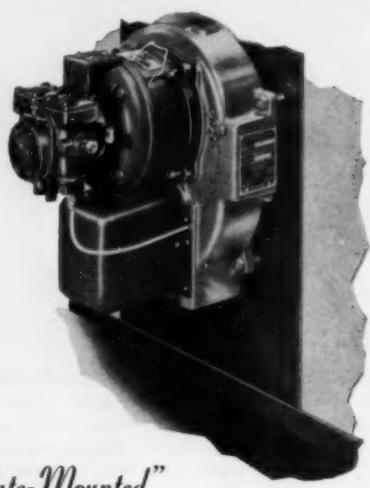


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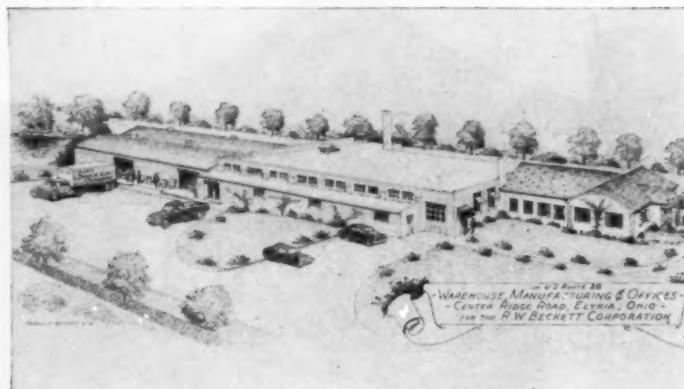
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Different . . . in design and operating principle . . . evidenced by 22 U.S. and Canadian Patents.

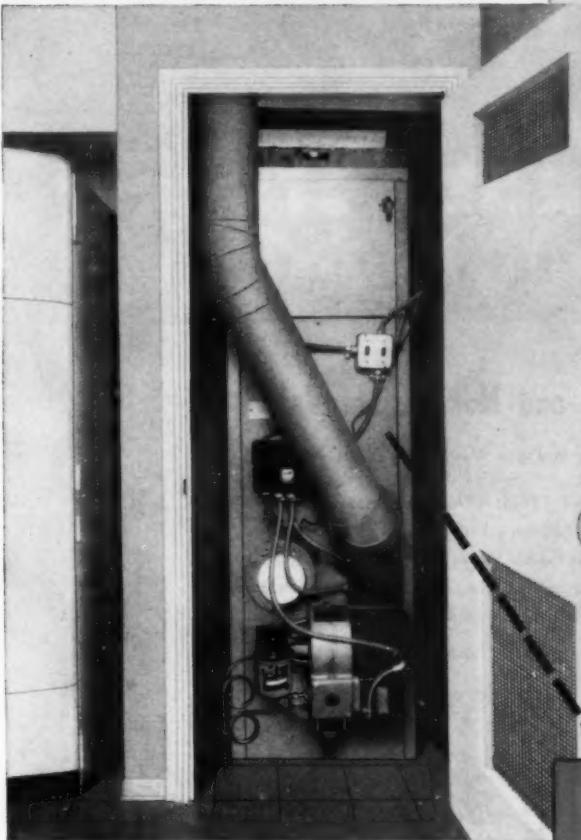
Higher average efficiency throughout each and every running period, long or short, accounts for lower fuel costs, year after year.

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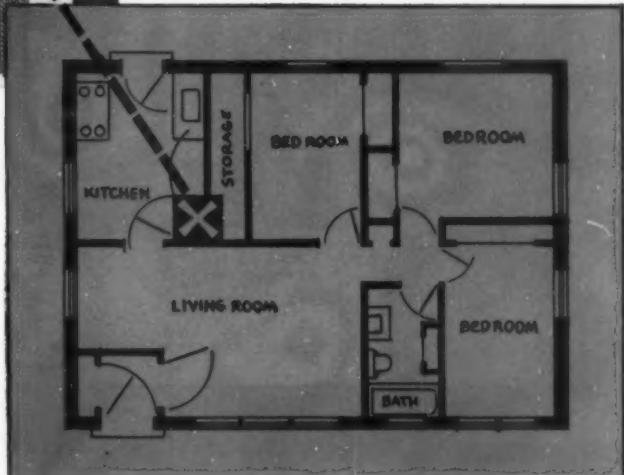
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Compact Crane year-round conditioner measures approximately 2 x 3 x 5 feet high—ideal for utility room or basement.

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Cools whole house in summer,
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Twin cooling system gives
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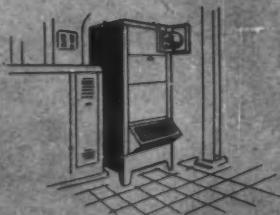
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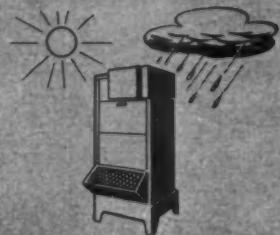
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3. COMPACT



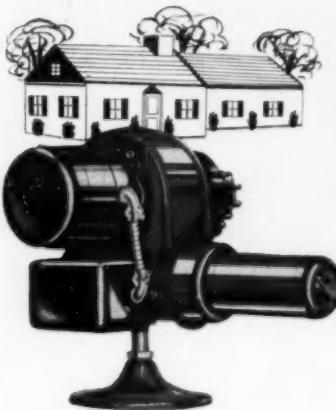
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GET ANY JOB ...ANY SIZE

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Gilbarco oil burners handle them all . . . large, average or small homes . . . commercial or industrial jobs. And Gilbarco's

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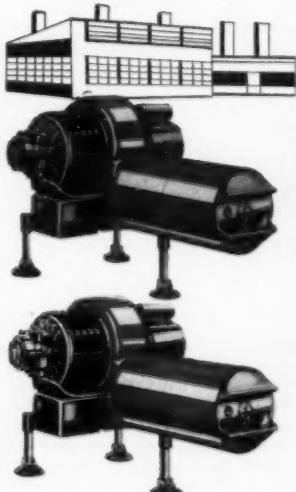
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Sell units, too — Gilbarco offers a complete line of warm air conditioners, suspended furnaces and boiler-burner units.

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are powered and priced
to save you plenty!



When it comes to saving money, you just can't beat a new Chevrolet truck. Here are two good reasons why this is true—

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In fact, your savings start the moment you close the deal for your new Chevrolet truck. That's because Chevrolet is America's lowest-priced line of trucks. And yet, no other truck at *any* price offers you all the new features and advantages you get in these great new Chevrolet trucks.

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THREE GREAT ENGINES—The new "Jobmaster 261" engine* for extra heavy hauling. The "Thriftmaster 235" or "Loadmaster 235" for light-, medium- and heavy-duty hauling. **NEW TRUCK HYDRA-MATIC TRANSMISSION***—offered on $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-ton models. Heavy-Duty **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **DIAPHRAGM SPRING CLUTCH**—improved-action engagement. **HYPOID REAR AXLE**—for longer life on all models. **TORQUE-ACTION BRAKES**—on all wheels on light- and medium-duty models. **TWIN-ACTION REAR WHEEL BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—greater holding ability on heavy-duty models. **NEW RIDE CONTROL SEAT***—eliminates back-rubbing. **NEW, LARGER UNIT-DESIGNED PICKUP AND PLATFORM STAKE BODIES**—give increased load space. **COMFORTMASTER CAB**—offers greater comfort, convenience and safety. **PANORAMIC WINDSHIELD**—for increased driver vision. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—easier, safer handling. **ADVANCE-DESIGN STYLING**—rugged, handsome appearance.

*Optional at extra cost. Ride Control Seat is available in standard cabs only. "Jobmaster 261" engine on 2-ton models; truck Hydra-Matic transmission on $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-ton models.

"tops" from every angle . . .

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FROM most any angle—beauty, construction, price, operation—KO-Z-AIRE's got everything else beat by a country mile. All of which are mighty important things to have in your favor when selling heating.

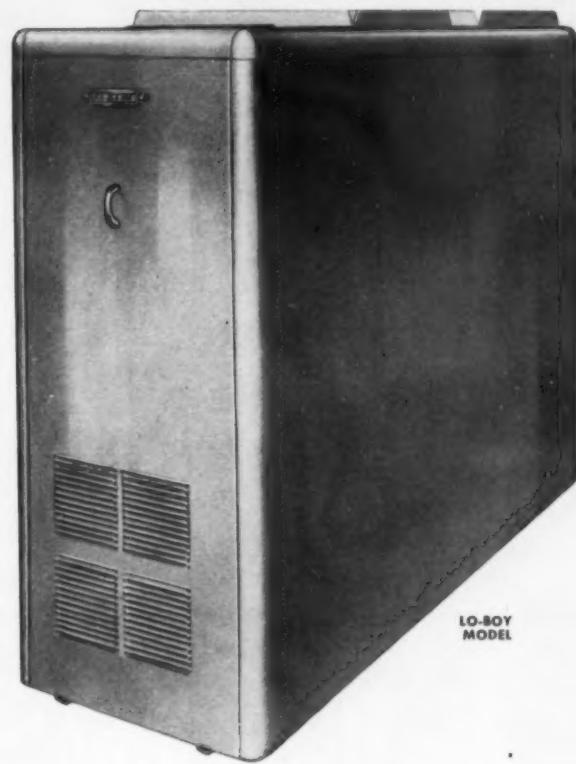
But one big thing you're also concerned with is installation. And that's the angle we're stressing here.

What you see is a KO-Z-AIRE Winter Air Conditioner. What you should know about it is that (like this one) most KO-Z-AIRE units have integrally-designed, one-piece, welded steel bases with cross-braced channels—features which cut installation time down and boost profits way up—since there's no need for special grouting or cementing. In addition, most KO-Z-AIRE units are assembled and wired at the factory.

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Pictured here are but a few of the over 30 gas and oil-fired models in the KO-Z-AIRE line. It includes furnaces ranging in capacities from 70,000 to 420,000 BTU input—a size for nearly every home, small church, school or commercial building.

But why not get all the facts and figures for your own inspection! Start now by mailing the coupon below.



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- Counterflow and Hi-Boy Models—Oil 85,000—96,000 BTU Output
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- Oil Conversion Burner 0.75—12 gallons per hour
- Gas Gravity Models—70,000—125,000 BTU Input

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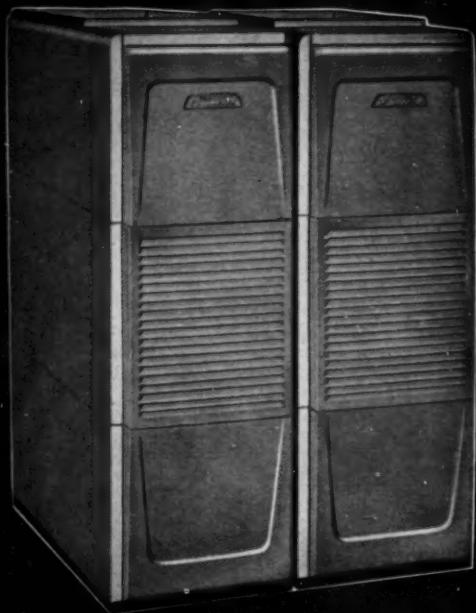
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Please send us details on the KO-Z-AIRE Gas Lo-Boy plus information on the complete KO-Z-AIRE line.

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 ● Title _____
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Type 904

Self-Contained Cooling Unit

For installation in stores, restaurants, etc. — or with duct systems in homes with radiator or radiant heat. Complete refrigeration system with blower and filters. Can be installed with steam coil for heating. Available with discharge grille, or can be used with duct-work. 2, 3, 5, and 7½ hp.

Once again, Mueller Climatrol has responded to your needs. The new companion winter-heating and summer-cooling units permit you to sell the *right size* in both heating and cooling units, irrespective of climates.

The heating unit shown at left above is available in four sizes — 80,000, 100,000, 125,000 and 150,000 Btu input. The type 906 cooling unit, at right above, is available in 2-hp and 3-hp sizes. Each size of the heating unit may be interchanged with either of the cooling models—thus giving you real flexibility.

You can offer prospects the last word in comfort with new Mueller Climatrol

engineering — new efficiency . . . new, attractive styling . . . new, handsome Mountain Spring Green finish.

You can talk cleaner living . . . better health . . . more convenience . . . less depreciation . . . greater comfort.

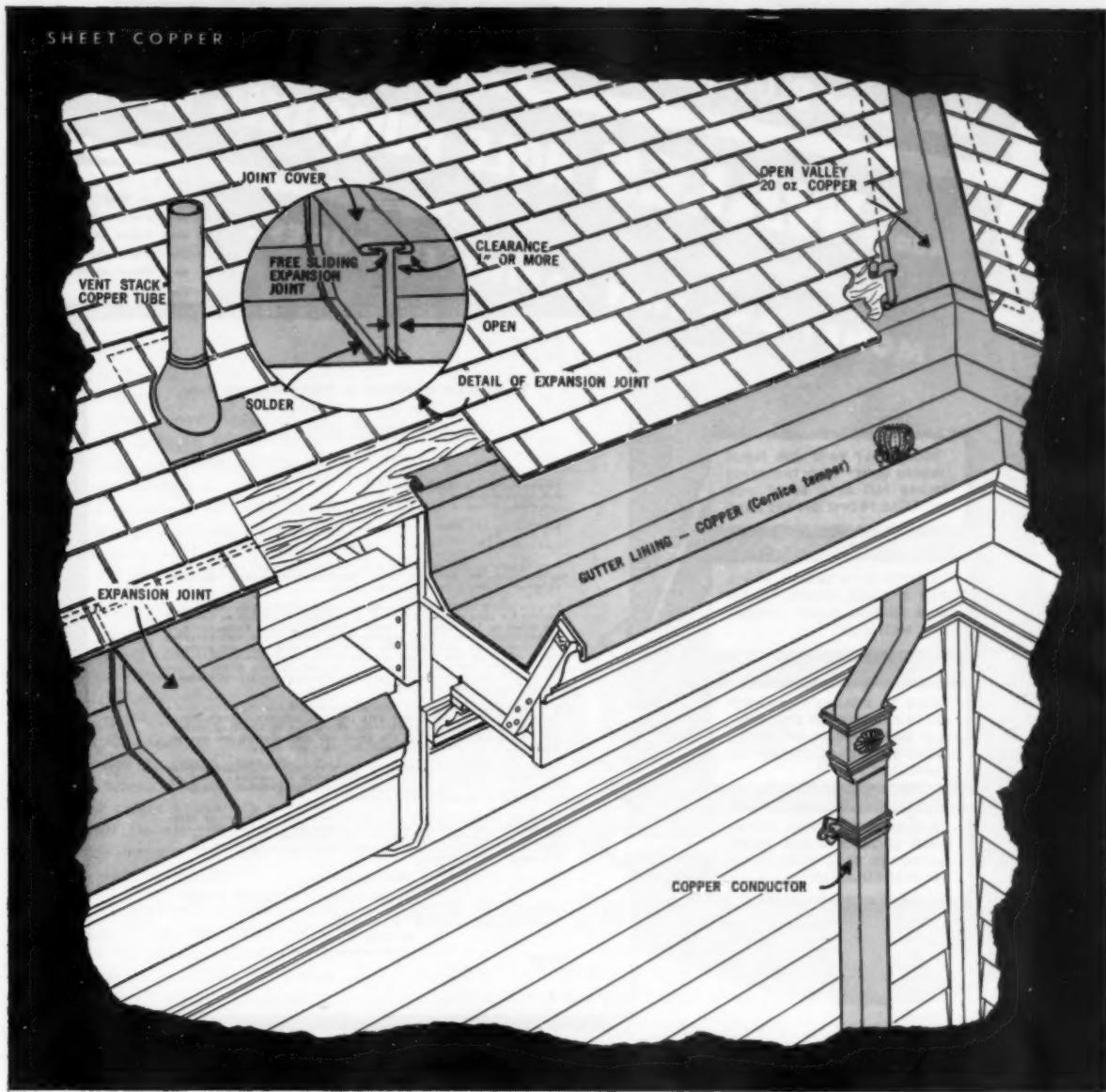
Write for further information on why you can count on Mueller Climatrol companion units to turn more prospects into buyers.



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B-159-1R

2030 V. Oklahoma Avenue, Milwaukee 15, Wisconsin



Built-in copper gutters: how to design and install them

Architects frequently prefer a gutter of built-in design so that the attractive architectural eave line of the house will not be hidden. Furthermore, a built-in gutter will handle more water and is not so easily damaged by sliding snow, ladders, etc.

A copper gutter of this type presents no problem to the experienced sheet

metal craftsman when accepted standards of design and installation methods are followed. Copper should be of a gage corresponding to the scale of the work. Examples: a gutter like that shown on the drawing with a bottom 8" wide—a size common on houses—may be of 16 oz. copper. A bottom 12" wide calls for 20 oz. copper . . . 18", 24 oz.

copper . . . and anything above, 32 oz. Copper should be cornice temper. Gutters must have free sliding edges and expansion joints midway between the downspouts.

If these points are kept in mind when you design or install this type of copper gutter you will be assured of a long-lasting, trouble-free installation.



Do you have the FREE Anaconda file of drawings? Each drawing shows a new or improved way to apply sheet copper. Each is printed on a separate 8½ x 11 page, handy for quick reference filing. This series may be obtained absolutely FREE by writing for Portfolio S to **The American Brass Company, Waterbury 20, Conn.** In Canada: **Anaconda American Brass Ltd., New Toronto, Ont.**

For sheet and roll copper an
ANACONDA®
Distributor will serve you best

READ WHAT BLOOMER OF CHICAGO SAYS

ABOUT WALES HOLE PUNCHING UNITS

MONEY AND TIME SAVING FEATURES . . .

Call on Wales-Strippit engineers before putting holes in angles, channels, sheets by any other method.

"NOT ONLY PAID FOR THESE WALES UNITS AND THE PRESS BRAKE BUT ALSO MADE OUR NORMAL PROFIT ON THE JOB"

"SETUPS WITH WALES UNITS ARE 8 TIMES FASTER THAN OUR FORMER GANG PUNCHING METHODS"

"ABLE TO DOUBLE THE RATED PRESS CAPACITY BY STAGGERING SHUT HEIGHT OF WALES UNITS WITH CAPS ON TOP OF PUNCHES"

"ELIMINATE STRIPPING PROBLEMS, SPOILED WORK FROM IMPROPER STRIPPING, AND BROKEN PUNCHES"

BLOOMER HEATING & VENTILATING CO.

Contractors - Fabricators

1237 WEST 47TH STREET, CHICAGO 9, ILL.

TRINITY 6-2222

February 26, 1954

Wales-Strippit Corporation
101 Madison Avenue
Oak Park, Illinois

Attention: Mr. Homer C. Gray

Gentlemen:

Very seldom in the operation of a fabricating plant have I come across such cost and time saving opportunities as have been made possible by Wales Hole Punching Units.

To give you a little background, my company bid a job, based on our former gang punching method of tooling, and after we received the order as low bidder, I investigated and bought Wales Units. In addition, we purchased another press brake. The cost records show that we not only paid for these Wales Units and the press brake, but this job also made more profit than any other on the job. We also bettered our delivery estimate by six weeks. Since the completion of this first order I have been using these same Wales Units on similar jobs.

My experiences have proven that setups with Wales Units are eight times faster than our former gang punching methods. Press downtime between setups is practically eliminated by mounting these Units on templates outside the press and just placing the entire assembly on the press bed, ready to start punching.

We were able to double the rated press capacity by staggering the shut height of Wales Units with caps on top of punches. Your Wales Units eliminate stripping problems, spoiled work from improper stripping and broken punches.

I thought you would be interested in these highlights of my experience with your tooling equipment and as I am enthusiastically passing along to you the results of my experience with Wales Hole Punching Units. I am also enclosing photographs of your equipment in operation.

Very truly yours,

BLOOMER HEATING & VENTILATING COMPANY

E. Ellis

E. Ellis
Plant Superintendent

BB:PP

This letter from Bloomer Heating & Ventilating Company points out typical time saving and money saving advantages that are also experienced by the thousands of users of Wales Hole Punching Units.

Patented, independent, self-contained Wales Units permit the same group of units to be used and reused in unlimited hole punching setups without aligning punches and dies in the press.

Specialists in Punching and Notching Equipment

Write for the fully-illustrated, functionally colored catalogs that completely describe Wales Hole Punching Units.

WALES-STRIPPIT CORPORATION

George F. Wales, Chairman

369 Payne Avenue, North Tonawanda, N. Y.

(Between Buffalo and Niagara Falls)

Wales-Strippit of Canada Ltd., Hamilton, Ontario



The Open Mind



George Hochstein

Sales Manager, Heating Division
THE HEIL CO.

Selling today is more difficult than it used to be because people are more intelligent. The daily deluge of advertising has made them sophisticated — tougher prospects and the successful salesman must have the perception of a psychologist and the adaptability of a chameleon.

Most important, however, is knowledge. In these highly competitive, fast moving times it is a solemn duty to be informed. The average prospect now is more technical-minded and the salesman must have the complete and up-to-the-minute facts about his product. He must know its advantages and be able to interpret them in terms of his prospect's specific needs.

This requires continuous learning — a receptive attitude — an open mind. It's far better to be a "know" man than a "yes" man. The extra studying you do every day is what counts. Otherwise you know only that which everyone else knows. And you can't offer your prospect any more than your competitor does.

Still there are fellows like the one who told us he didn't need any more selling information because, "I already know how to sell twice as good as I'm doing now."

Keeping current on product and market information gives the modern salesman perspective, proportion, and the important competitive advantage of being first with latest. And whenever a man relies more on personality than brains, he soon gets to the point where he's over paid.

You ain't seenh nothin' yet!



WAIT! 'til you see the new HEIL line at the Indoor Comfort Show

Sure, everybody talks about having a complete line . . . but you're going to see a complete line—*PL US*, when you see the new HEIL models at the show.

Sure, everybody talks about features, but you'll see MORE new features in the new HEIL line *than any manufacturer has ever presented at one time!*

This year, lower prices alone won't get the business. You need new prices and new models to get those orders . . . and HEIL has both!

And remember this . . . more than ever, HEIL is the dealer's line. Every part from heat exchanger to exterior enamel is there to make selling, installing, servicing easier and more profitable for you, the dealer.

IF YOU LIKE MAKING MONEY—DON'T MISS HEIL!
We'll be looking for you right at the front door (Spaces 501-505) at the Philadelphia Show.

THE HEIL co.

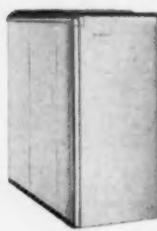
MILWAUKEE 1, WISCONSIN

HILLSIDE, NEW JERSEY

SALES OFFICES: Union, N. J.; Atlanta, Ga.; Washington, D. C.; Cleveland, Ohio; Chicago, Ill.; Detroit, Mich.; Milwaukee, Wis.; Kansas City, Mo.; Denver, Colo.; Dallas, Tex.; Los Angeles, Calif.; Seattle, Wash.; New York, N.Y.

The Heil Co. is a member of OHI, GAMA and an associate member of NHWA.

The Price is LOW . . .



No. P-71, Basement A.C. Unit
with hinged, cabinet door.
71,000 B.T.U. at register.



No. PH-85-E Utility A.C. Unit
84,000 B.T.U. at Burner.



No. P-71-E
Basement A.C. Unit with
burner controls exposed
71,000 B.T.U. at Register.

No. PHC-85-E Counterflow Unit
84,000 B.T.U.
at discharge outlet.

**UTILITY UNIT AND COUNTERFLOW UNIT
CASINGS ARE ONLY 20" SQUARE.**

**BASEMENT A.C. UNITS CASING
20" WIDE, 36" LONG**

**These Units are readily converted for
gas firing by simply changing burners.**

THE HENRY FURNACE COMPANY • Medina, Ohio

HEATING AND AIR CONDITIONING UNITS

MONCRIEF

FURNACE PIPE AND FITTINGS

**The Quality
is HIGH . . .**

**ON
MONCRIEF**

OIL FIRED UNITS

**for the
SMALL HOME!**

Moncrief announces — BIG NEWS — IMPOR-TANT NEWS to heating contractors who need smaller units for today's small homes — Oil Burning Units especially designed for all types of small home construction — Units that are so compactly designed . . . so efficient in operation . . . so quick and easy to install . . . Yes — Units that actually eliminate ANY competition.

COUNTERFLOW and UTILITY UNIT CASINGS ONLY 20" SQUARE.

BASEMENT A.C. UNIT CASING ONLY 20" WIDE, 36" DEEP.

Rugged steel heating elements welded gas tight . . . Rigid, compact, tight fitting cabinets with baked enamel finish . . . and Moncrief's outstanding, gun-type oil burner, the quietest oil burner on the market, that provides economical and efficient operation with the heavier, less expensive grades of domestic heating oils.

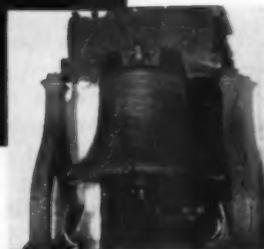
Yes — with Moncrief you are out-ahead with the biggest value in oil burning furnaces, for the small home, that has ever been offered in Moncrief's 60 years in providing heating equipment of the highest excellence.

See your Moncrief jobber — get the complete story of the new low prices that are keeping Moncrief in the front row of the 1954 competitive market.

AMERICAN
ARTISAN



NATIONAL
OIL HEAT
EXPOSITION
ANNUAL CONVENTION
OIL-HEAT INSTITUTE



COMMERCIAL MUSEUM
PHILADELPHIA, PA.

MAY 16-20, 1954



R. H. L. Becker
Managing director of OHI
and of the exposition



Paul K. Addams
OHI's president



M. J. Donahue
General chairman of the ex-
position and the convention



J. H. B. Albert
Chairman of the convention
program committee

Guide to the 1954

OHI Convention and Exposition



"HE WHO would achieve success must give freely of that which costs him nothing: friendliness — sincere interest — good council."

These words of Ben Franklin, written a couple of hundred years ago, will be put into effect during the week of May 16 by members of the oil heating industry and their associates, when the annual convention of the Oil-Heat Institute of America is held in Philadelphia. Ralph H. L. Becker, managing director, has stated that everything has been done to coordinate the convention and exposition programs so that everyone attending will be able to get the most

out of every hour spent at this event. Many new products will be shown for the first time at the exposition, which has taken for its name "National Indoor Comfort Exposition." This name was selected because equipment for heating, cooling, ventilating, humidifying and filtering will be exhibited.

"Attendance is expected to break the 1952 record," says M. J. Donahue, general chairman of the exposition and convention, "and 1952 was the largest registration in the history of the association."

To point the exposition activities toward specific objectives, each day has been designated for some special group. Sunday, May 16, is open to the public and is known as "Everybody's Day." Monday, the 17th, has been designated as "Fuel Oil Dealers' Day" and Tuesday, the 18th, as "Service Installation Day." Wednesday, the 19th, is "Dealer Day" and Thursday, the 20th, "Industry Day."

The convention program has been designed to provide up-to-the-minute information through technical sessions, round table discussions and merchandising methods, according to J. H. B. Albert, chairman of the program committee.

Paul K. Addams, president of the Oil-Heat Institute, has invited everyone interested or affiliated with the oil heat industry to attend this event. There will be no registration fee for anyone, either for the convention or the exposition.

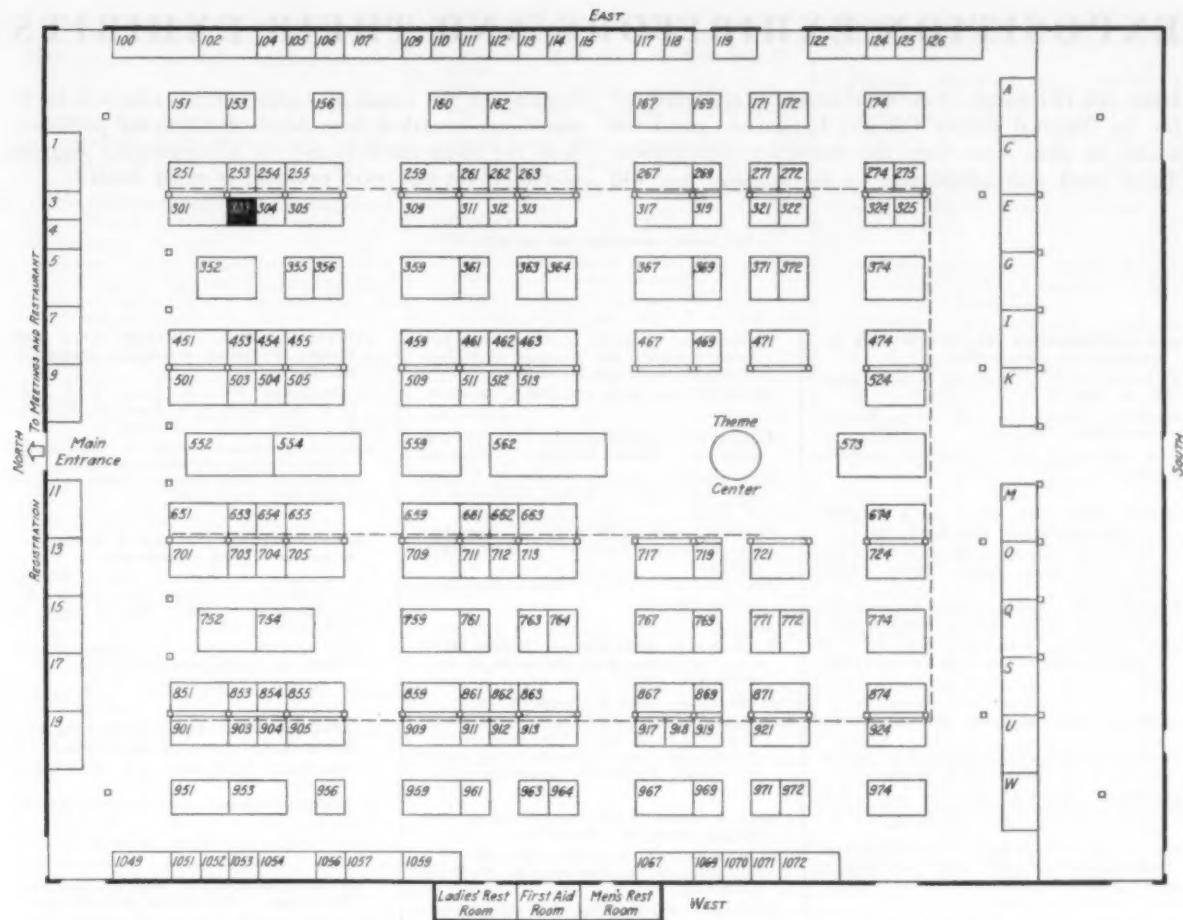
A special luncheon, arranged for the accessory division, will be held Wednesday, May 19, at 12:45 in the ballroom of the Commercial Museum. The speaker will be Colonel Jack Major; his speech — "Taxes, Women and Hogs."

Another highlight of the meeting will be the "Old Timers" jamboree. W. J. Owens, chairman of the Old Timers' Club, announced that the Philadelphia Rifle Club will be host on Tuesday evening, May 18, beginning at 6 p.m.

EXPOSITION HOURS

The exposition will be open:
Sunday, May 16 1:00 - 8:00
Monday, May 17 1:00 - 10:00
Tuesday, May 18 1:00 - 10:00
Wed., May 19 1:00 - 10:00
Thursday, May 20 1:00 - 6:00

EXHIBITION HALL
COMMERCIAL MUSEUM



Booth Layout, Commercial Museum, Philadelphia. The American Artisan's booth is No. 303

See listing of booths on pages 130-134

PROGRAM

Benjamin Franklin Hotel

Sunday, May 16

- 10:00 - 12:00 a.m. Executive Committee
- 12:30 - 1:30 p.m. Show Committee Inspection
- 2:30 - 3:30 p.m. Distribution Division Executive Committee
- 3:30 - 5:30 p.m. Old Distribution Division Board

Monday, May 17

- 9:30 - 12:00 a.m. "Proper Delivery Procedures Boost Sales"
- 10:00 - 12:00 a.m. Retiring Board Meeting
- 1:30 - 4:00 p.m. Round Table Discussion, "Fuel Oil Delivery"

- 2:00 - 3:00 p.m. Annual Accessory Division Meeting
- 2:00 - 3:00 p.m. Annual Distribution Division Meeting
- 3:00 - 5:00 p.m. New Board of Distribution Division

Tuesday, May 18

- 9:30 - 12:00 a.m. "He Sells More Who Serves Best"
- 1:30 - 2:30 p.m. Annual Meeting
- 1:30 - 4:00 p.m. Round Table Discussion, "Service-Installation"
- 3:00 - 5:30 p.m. New OHI Board (closed) Meeting
- 3:00 - 5:30 p.m. Engineering Committee
- 3:00 - 5:30 p.m. Distribution Division Secretaries Meeting
- 6:00 - 11:00 p.m. "Old Timers" Meeting

Wednesday, May 19

- 9:30 - 12:00 a.m. "Management - Sales Problems - Profits"
- 9:30 - 12:00 a.m. Commercial - Industrial Section
- 12:45 - 2:30 p.m. Accessory Division Luncheon
- 3:00 - 4:45 p.m. Round Table Discussion, "Dealer Management"
- 2:45 - 5:45 p.m. Technical Division
- 5:00 - 7:00 p.m. Commercial Industrial (by invitation)

Thursday, May 20

- 9:30 - 12:00 a.m. "Sell More To Make More in '54"
- 6:00 - 7:30 p.m. "Everybody's Cocktail Hour"
- 8:00 - 11:00 p.m. OHI Banquet - Entertainment

EXPOSITION EXHIBITORS AND THEIR EXHIBITS

HERE ARE THE names of the exhibitors who are scheduled for the National Indoor Comfort Exposition, per latest advice at press time from the exposition management. Those listed with information on the products they will

exhibit and the names of representatives who will be in attendance furnished these details direct to the publisher. With the booth numbers and the accompanying diagram of the exhibit hall, each exhibitor is easily located.

(See layout of exhibit hall on page 129.)

ACE ENGINEERING CO., 1435 W. 15th St., Chicago 8, Ill.—Booth 859

In attendance: I. L. Schurman, J. W. Cowan, R. W. Bardach, Jr.
Exhibiting: Combination rotary oil-gas burners, panel boards, "Unipaks."

New Products: Electric oil preheater, metering pump.

ADELTA MFG. CO., INC., 21st & Ellsworth Sts., Philadelphia 46, Pa.—Booth 964

In attendance: Martin Corbman, Robert Corbman, Paul Agey, Angelo Fasulo, Martin Posner.

Exhibiting: Pipe, duct and fittings for residential heating and air conditioning installations.

New Products: "Snap-Lock" pipe in 5 ft lengths designed for warm air perimeter heating.

ALDRICH CO., Wyoming, Ill.—Booths 462-463

In attendance: P. M. Stephenson, E. L. Fox, B. Mulder, G. C. Hench, L. R. Williams.

Exhibiting: "Heat-Pak" B series and "Gulf Stream" C series boiler-burner units, high pressure conversion oil burners.

New Products: "Gulf Stream" C series package boiler-burner units for small and medium sized homes.

ALLIED FEDERAL INDUSTRIES, 14 Mitchell Pl., Newark, N. J.—Booth 124

ALLIED TANK TRUCK EQUIPMENT CO., 24th & Brown Sts., Philadelphia 30, Pa.—Booth 167

In attendance: David J. Constantine, Maxwell S. Constantine, Fred Dykes, Al Aspen.

Exhibiting: "Rebel" tank trucks.

AMERICAN ARTISAN, 6 N. Michigan Ave., Chicago 2, Ill.—Booth 303

In attendance: Wallace J. Osborn, R. A. Jack, C. M. Burnam, Jr., Robert J. Osborn.
Exhibiting: American Artisan, technical books, market data.

ANCHOR DIV., STRATTON & TERSTEGGE CO., P. O. Box 311, New Albany, Ind.—Booth 956

In attendance: J. L. Meagher, E. J. Fackler, N. J. Griffin, J. K. Hammond.

Exhibiting: Oil burners, furnaces.

New Products: Sheet metal burner.

ARROW-HART & HEGEMAN ELECTRIC CO., 103 Hawthorne St., Hartford 6, Conn.—Booth 855

In attendance: Robert Dalton, Stanley Robinson, Arthur Johnson.

Exhibiting: Industrial controls.
New Products: Air conditioning starter and contactor.

AU-TEMP-CO—See Heat-Timer Corp.

AUTO-FLO CORP., 14590 Schaefer, Detroit 27, Mich.—Booth 254

In attendance: J. Halter, J. Ryan, Irving Suss, Arthur Friedman, Ray Westlund, D. B. Sutherland, H. Michelman, B. Magiday.

Exhibiting: Automatic humidifiers, oil filters.

AUTOMATIC DEVICES CO., INC., 714 Hillgrove Ave., Western Springs, Ill.—Booth 662

In attendance: Henry T. Kucera, O. W. Dobson, Ray Cauwels, Walter McPherson, C. W. Bailey.

Exhibiting: 3-Way "Weather-Flo" home heating regulator, "Weather-Flo" home heating regulator.

New Products: 3-Way "Weather-Flo" home heating regulator.

BACHARACH INDUSTRIAL INSTRUMENT CO., 7301 Penn Ave., Pittsburgh 8, Pa.—Booth 469

In attendance: John W. Smith.

Exhibiting: Combustion testing instruments, "Fyrite" service kit, "Vaporizing Burner" adjusting kit, "Florite" direct-reading velocity meter and "Tempscriber" recorders.

BELL & GOSSETT CO., 8200 N. Austin Ave., Morton Grove, Ill.—Booth 721

In attendance: E. J. Gossett, R. E. Moore, C. E. Pullum, R. A. Patterson, W. A. Boone, Frank Gall.

Exhibiting: Booster pumps, flow control valves, domestic water heaters, fuel oil heaters, other heating specialties.

New Products: Special control systems.

BETHLEHEM FOUNDRY & MACHINE CO., 225 W. 2nd St., Bethlehem, Pa.—Booth 122

In attendance: Raymond C. Dietz, James W. Meissner, Carl F. Wagner.

Exhibiting: Warm air furnaces, conversion oil burners, "Dynatherm," "Beth-Pak," "Cru-sade-a-therm."

New Products: "Beth-Pak."

BOSTON MACHINE WORKS CO., 7 Willow St., Lynn, Mass.—Booth 1072

In attendance: R. L. Dennis, I. M. Nelson, Cutter Walters, Anthony Torrisi, L. E. Schulein, Wm. B. Forrest, Wm. J. Young, Wm. A. Young, B. Howard Nunnally, Walter Briggs, Fred Bottiger, John Sibarium, T. C. French, Paul Beining, James Hart.

Exhibiting: "Instant Glo" combustion chambers, "Apthorp" nozzles, "Clearview" tank gages, "Wigwam" thermacs, "Boston-Breeze" horizontal burners, standard draft controls, chrome steel baffles.

BURNHAM CORP., Irvington, N. Y.—Booths 459-461

CAMBRIDGE TOOL & MFG. CO., INC., 63 Gorham St., Somerville 44, Mass.—Booth 1053

In attendance: William Martin, William Ricci, Al Katz.

Exhibiting: Fusible valves for residential power and range burners.

New Products: Fusible thermal switch, range burner fusible valve.

CHRYSLER CORP., AIRTEMP DIV., 1600 Webster St., Dayton, O.—Booths 909-910-911-912-913

In attendance: Harry P. Young, R. J. Link, C. E. Buchholzer, J. F. Knoff, M. T. Bard, E. A. Nash, A. J. Schiffmann.

Exhibiting: Casement window air conditioners, custom room air conditioners, highboy and lowboy gas fired furnaces, water and air cooled year 'round units.

CLEAVER-BROOKS CO., 326 E. Keefe Ave., Milwaukee 12, Wis.—Booth 851

In attendance: V. Resek, H. McCoy, W. Demuth, M. Will, F. Hopp, Frank Wymbs, W. P. Gilbert, F. N. Knorr, Nate Feldman, T. Walszak, G. Holliday.

Exhibiting: Oil burners for commercial, industrial and institutional installations.

New Products: "Hev-E-Oil 4" burner.

CLEVELAND FUEL EQUIPMENT CO., 1111 Brookpark Rd., Cleveland 9, O.—Booth 712

In attendance: N. F. Hahn, J. P. Metz, Joseph Chapline.

Exhibiting: Sequence draft control and instruments.

New Products: "Lo-Draft" cut-off.

COLUMBIA BOILER CO., 3846 Lancaster Ave., Philadelphia 4, Pa.—Booths 1056-1057-1059

In attendance: John G. Howley, R. W. Boarman, J. J. Meade.

Exhibiting: Low pressure heating boilers, high pressure industrial boilers, oil boilers.

COMBUSTION CONTROL CORP., 718 Beacon St., Boston 15, Mass.—Booth 705

In attendance: L. D. Sibley, B. E. Shaw, E. F. Hall, K. R. Blaine, H. C. Christiansen, E. L. Bedard, A. J. Erickson, J. M. Englisby, D. Fisher, A. Lovendahl, W. F. Featherstone.

Exhibiting: "Fireye" flame failure safeguards, programming controls, smoke density indicators, recorders, operating controls.

COMBUSTIONEER DIV., STEEL PRODUCTS ENGINEERING CO., 1205 W. Columbia St., Springfield, O.—Booth 107

In attendance: H. W. Shirey, H. McCool, O. Puckett.

Exhibiting: Low and high pressure oil burners, oil furnaces, humidifiers.

New Products: New line of oil furnaces.

COMMERCIAL FILTERS CORP., 2 Main St., Melrose 76, Mass.—Booth 3

In attendance: J. R. Chisholm, H. A. Wilson, J. V. Calhoun, R. Schadler.

Exhibiting: "Fulfo" filters, "Honeycomb" filter tubes.

New Products: FB4 for heating oil and boiler water clarification, large filters for fuel trucks and truck loading platforms.

CRISE CONTROLS DIV., THE ACRO MFG. CO., 2040 E. Main St., Columbus 16, O.—Booth 109

In attendance: E. V. Bishoff, L. R. Preslan, D. E. Kastle, J. D. Phillips.

Exhibiting: Fan and limit controls, zone control systems, damper motors.
New Products: New models of above controls.

CROWN ENGINEERING CORP., Locust St., Keypoint, N. J.—Booth 904
In attendance: R. W. Bernard, Frank Gaskill.
Exhibiting: Oil burner ignition assemblies.

DAVIS ENGINEERING CORP., 1064 E. Grand St., Elizabeth 4, N. J.—Booth 759
In attendance: R. Lissom.
Exhibiting: "Paracoil" fuel oil heaters.
New Products: Type "GF" indirect gas fired fuel oil heater, LP-20 condensate inspection tank and oil leak detector.

DELAVAL MFG. CO., 811 4th St., West Des Moines, Ia.—Booth 7
In attendance: David T. Morgensthaler, Eugene O. Olson, H. L. McNally, Lee N. Beardsley, William J. Thurston, William B. Spargur, Charles K. Elder, John J. Elder, William A. Roben, William J. Debler.
Exhibiting: Oil burner nozzles and accessories, "Hally" nozzle filters, "LoFlo" nozzles, serviceman's kits, flame mirrors, sludge solvent.
New Products: New return flow nozzles.

DELCO APPLIANCE DIV., GENERAL MOTORS CORP., 391 Lyell Ave., Rochester 1, N. Y.—Booth M
In attendance: T. J. Affleck, R. A. Lyons, J. R. Williams, W. J. MacArthur.
Exhibiting: "Delco-Heat" oil fired heating equipment.
New Products: "Delco Conditionair" — oil fired combination central heating and cooling unit.

DELCO PRODUCTS DIV., GENERAL MOTORS CORP., 329 E. 1st St., Dayton 1, O.—Booth 905
In attendance: J. N. Tilbrook, J. R. Lakin, C. L. Holverstott, R. C. Anderson, W. T. Baxter, C. R. Knowlton, L. H. Shue.
Exhibiting: Oil burner motors, blower motors, general purpose motors, shaded pole motors, fan motors.

DELTA HEATING CORP., 1 Cole St., Trenton 8, N. J.—Booths 151-153
In attendance: A. L. Nathan, Roy C. Hauck, Wayne Walters, E. D. Black, H. E. Culley, E. S. Cushing, James Edgar, Richard Halberg, William Schonfeld, M. Portnoy, S. Schwartz, H. Steffy, Howard J. Waff, Jr., Walter Coe.
Exhibiting: Floor, wall, highboy, lowboy, counterflow, suspended oil fired furnaces, unit heaters, air conditioners.
New Products: Year 'round air conditioner, oil fired unit heater, pressure type oil fired floor furnace.

DETROIT CONTROLS CORP., 5900 Trumbull Ave., Detroit 8, Mich.—Booth 267
In attendance: C. H. Hodges, Jr., E. J. Doucet, K. B. Thorndike, S. A. Anderson, F. J. Ball, B. L. Bombard, R. M. Bard, J. W. Carlson, A. L. Fuller, W. H. Hohmeyer, R. W. Lamb, J. F. Page, R. S. Pultz, N. L. Sell, H. L. Walker.

Exhibiting: Automatic controls for domestic heating, "Weatherbrain" indoor-outdoor control, radiator valves and balancing fittings.
New Products: "Belknap" valves, immersion limit control.

DIELECTRIC PRODUCTS CO., INC., 125 Virginia Ave., Jersey City 5, N. J.—Booth 261
In attendance: Henry T. Carey, Phil Krueger, Ted Roman.
Exhibiting: Domestic and industrial oil burner ignition electrode assemblies, bus bar assemblies, cable assemblies, standard and special insulators, fittings.

DOLE VALVE CO., 1933 Carroll Ave., Chicago 12, Ill.—Booths 321-322
In attendance: J. F. Lund, H. H. Aronson, S. G. Phillips.

Exhibiting: Air valves, vacuum valves, automatic hot water air valves, chamber vents, automatic registers, water mixers, water flow control valves, shower control valves.
New Products: Shower control valves, water flow control valves.

ECKHART MFG. CO., INC., 931 Lehigh Ave., Union, N. J.—Booth 903
In attendance: Arnold Eckhart, Sr., Arnold Eckhart, Jr., Walter E. Eckhart.

Exhibiting: "Silent Korth" oil burners, "Korth" boiler-burner units up to 2400 ft for steam and water.

EDDINGTON METAL SPECIALTY CO., Bristol Pike, Eddington, Pa.—Booth 471

In attendance: Vincent E. Devine, Walter B. Stamberger, Jr., Wesley Czarnecki, Casimer Czarnecki, Stanley Czarnecki, Walter V. Czarnecki, Jr.

Exhibiting: Fuel oil filters, oil burner nozzles, inspection mirrors, air cones and stabilizers, electrode holders, single adjustment duplex valves.

New Products: High and low pressure combustion heads, serviceman's kits, low pressure oil burner nozzles.

FIELD CONTROL DIV., H. D. CONKEY & CO., Mendota, Ill.—Booth 9

In attendance: H. J. Potter, Henry Remsberg, E. A. Field, C. W. Potter, also 35 district representatives.

Exhibiting: Type "M" barometric draft controls, "M-G" industrial gas controls.

New Products: Type "R-C" barometric draft controls.

FITZGIBBONS BOILER CO., INC., 101 Park Ave., New York 17, N. Y.—Booths 509-511

In attendance: Paul K. Addams, Gustav E. Olsen, John R. Collette, Gilbert Nelligan, William O. Spiess, F. M. Harmer, W. C. Wetherstone, E. N. Black, 3rd, R. J. Wickel, E. W. Skoglin, Sr., F. M. Butler, G. T. Kohler.

Exhibiting: Boiler-burner units, "R-Z-U" junior boiler, "80" series boiler, oil burner, circulator, "Tanksaver".

New Products: No. 770 boiler-burner unit.

FLAME MASTER CO., INC., 3118 Milwaukee Ave., Chicago 18, Ill.—Booth 124

In attendance: Robert Walshin, Rose Walshin, Frank Ribnek.

Exhibiting: Low and high pressure oil burners, low pressure conversion pump.

New Products: Low pressure burner.

FLUID HEAT DIV., ANCHOR POST PRODUCTS, INC., 6500 Eastern Ave., Baltimore 24, Md.—Booths 651-701

In attendance: M. J. Donahue, T. E. Carson, R. T. Demarest, D. Grey Knowles, H. E. Johnston, W. S. Howland, A. E. McAvoy, E. F. Long, T. A. Harper, Jr., A. E. Price.

Exhibiting: Pressure fired conversion burners, furnaces and boilers, rotary conversion burners.

FOSTORIA PRESSED STEEL CORP., Fostoria, O.—Booth 924

In attendance: R. H. Carter, R. W. Jeffery, E. W. Kuhn.

Exhibiting: "Dynamapump" magnetic circulator pump.

New Products: "Dynamapump" magnetic circulator pump.

FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., 1400 Taylor Ave., Baltimore 4, Md.—Booth 253

In attendance: J. W. Hammond, W. E. Hopkins, J. G. Holland, C. G. Larson.

Exhibiting: Instruments for indicating and recording temperature and relative humidity.

GENERAL ELECTRIC CO., APPARATUS DEPT., 1 River Rd., Schenectady 5, N. Y.—Booths 115-117-118

In attendance: P. Gomez, W. T. Goldsmith, D. J. Rowe, G. J. Sheahan, A. L. Johnson, W. F. Brunner, W. Pye, R. J. Wanner, E. F. Rhodes, W. W. Warner, C. J. Ossenfort.

Exhibiting: Heating controls, fractional horsepower motors.

GENERAL ELECTRIC CO., HOME HEATING & COOLING DEPT., 5 Lawrence St., Bloomfield, N. J.—Booth 554

In attendance: S. J. Levine, R. C. Robertson, W. A. Mulcock, W. L. Snellings, I. P. Sharpe, C. M. Toelaer, L. H. Hirschbach, J. S. Beldon, H. N. McMenimen, A. K. Tower, I. M. Dennis, S. H. Painter, E. V. Whiteley, A. C. Kretschmar, H. E. Wood.

Exhibiting: "Air-wall" system, warm air furnace line, oil burner line.

New Products: New downflow and horizontal year 'round air conditioner with "Air-wall," new air cooled condenser.

GENERAL FILTERS, INC., 43800 Grand River Ave., Novi, Mich.—Booth 663

In attendance: Robert G. Gregory, Roland A. Redner, Mrs. Grace Redner, E. S. Gallagher, also field representatives.

Exhibiting: Filters for light and heavy fuel oils, "Unifilter" combination filter valve and fittings, "Clean Right" soot remover.

New Products: Water trap for new style fuel oil tanks with bottom outlet.

GENERAL FITTINGS CO., 123 Georgia Ave., Providence 5, R. I.—Booth 663

GILBERT & BARKER MFG. CO., West Springfield, Mass.—Booth 19

In attendance: Harry J. Lanyon, Harold K. Ricker, P. A. Atkinson, Frank Commons.

Exhibiting: Oil burners, suspended furnaces, vertical floor furnaces, warm air furnaces, cast iron boilers.

New Products: Suspended furnaces, vertical floor furnaces, warm air furnaces, newly designed cast iron boilers.

GIRARD TRUST CORN EXCHANGE BANK, 2nd & Chestnut Sts., Philadelphia 2, Pa.—Booth 105

In attendance: Frank C. Heebner, W. E. Lutz, Richard T. Taylor.

Exhibiting: Retail and wholesale finance plans for the heating and air conditioning industry.

New Products: Summer plan for financing heating installations, permitting purchaser to have heating unit installed now and delay making any payment to the bank until October 15, 1954.

GULF OIL CORP., Gulf Bldg., Pittsburgh 30, Pa.—Booth 867

In attendance: C. E. Kramb, L. A. Devlin, B. M. Markwell, M. C. Enright, A. V. Harris, S. H. King.

Exhibiting: "Solar Heat" oil for home heating.

HART HEAT DIV., AVERY FARM MANUFACTORY CO., Four of Junction St., Peoria, Ill.—Booth 1054

In attendance: Earl K. Smith, Lloyd F. Smith, Bryan Wright.

Exhibiting: Oil burners in operation.

HAWKINSON TREADS, jointly sponsored by Charles P. Raney, 408 S. Broadway, Akron 8, Ohio, and Charles D. Kimball & Co., 5342 Broadway, Chicago 40, Ill.—Booth 767

In attendance: Charles P. Raney, Charles P. Raney, Jr., H. A. Heinbaugh, Richard H. Kimball, Ray P. Babcock.

Exhibiting: Tires designed for industrial and commercial uses.

HEAT-TIMER CORP., 657 Broadway, New York 12, N. Y.—Booth 764

In attendance: Edward J. Zeitlin, Al Fowler. Exhibiting: Motorized valves, motors, "Quick Vent" valves, thermostatic valves, electronic controls and heat recorders. New Products: Heat recorder and heat totalizer.

HEIL CO., 3000 W. Montana St., Milwaukee 1, Wis.—Booths 501-503-504-505

In attendance: John Barclay, Joseph F. Heil, Jr., William A. Matheson, Jr., Karl Mould, Robert Rose, Fred Brubaker, Jack Huber, John Baikie, Jack Mitchell, Roy King, Lee Danielson, Alex Unson, Charles Kahl, George Katzenberger. Exhibiting: Console and horizontal 2 and 3 ton summer air conditioners, with and without independent blowers; standard, highboy, counterflow and horizontal oil fired furnaces; oil fired steel boilers; conversion oil burners. New Products: Summer air conditioners, line of furnaces.

HENRY FURNACE CO. — See C. A. Olsen Mfg. Co.**HERCO OIL BURNER CORP., 131-135 Locust St., Lancaster, Pa.—Booth 119**

In attendance: Harry B. Rohrer, Ray W. Mumaw. Exhibiting: High pressure gun type oil burners. New Products: Low pressure burner.

HOSKINSON FREE HEATER INC., 248-47 Jamaica Ave., Bellrose, L.I., N. Y.—Booth 918

In attendance: Gordon H. Hoskinson, George Hanna, Norman Wehrman, Hugo Schwab, Charles Fisher, Gerard Tully. Exhibiting: Basement heating units.

HY-LO BURNER CO., INC., Bristol Pike, Eddington, Pa.—Booth 114

In attendance: Kenneth Leatherman, Edward W. Pienta, C. B. Wells. Exhibiting: Domestic gun type oil burners. New Products: Low pressure burner, utilizing the Sundstrand LP fuel unit in operation.

INTERNATIONAL HEATER CO., 101 Park Ave., Utica 2, N. Y.—Booth 352

In attendance: I. C. Barber, Elwood Hesch, C. T. Moyer, Sr., C. T. Moyer, Jr., J. F. Bennett, W. R. Landmesser, L. B. Sherry, W. W. Hutchinson, H. F. Randolph, Jack Hildibidle, Millar Wheeler, James Bond, Jack Kaley. Exhibiting: Oil fired suspended units, lowboys, highboys, summer air conditioners. New Products: Summer air conditioner, lowhighboy.

IRON FIREMAN MFG. CO., 3170 W. 106th St., Cleveland 11, O.—Booths 359-361

In attendance: C. T. Burg, E. C. Webb, Dale Wylie, W. J. O'Neil, S. H. Beach, J. E. Atchison, D. Paul Bailey, Robert F. Lunt, Peter Storti, R. C. Wright. Exhibiting: Oil heating and power equipment, residential, commercial and industrial, including furnaces, boilers, and commercial-industrial oil-gas package burners; central cooling units; room air conditioning units; "SelecTemp" heating system. New Products: "SelecTemp" heating system.

JACKSON & CHURCH CO., 321 N. Hamilton St., Saginaw, Mich.—Booth 17

In attendance: C. W. Stuart, D. L. Perrot, H. K. Beck, F. C. Adams, Tom Conlon, Ray Boland, H. Bales, Robert Goughnour, Paul Deuble, Richard Hoover, Earle Schroeder, Frank Young, Herb Robinson, Arthur Duwe, Stanley Richards, Arthur Pracker, A. C. Drouillard, C. W. Wagner.

Exhibiting: Warm air furnaces.

New Products: Line of residential warm air furnaces.

JEFFERSON ELECTRIC CO., 25th & Madison, Bellwood, Ill.—Booth 262

In attendance: C. T. Harnett. Exhibiting: Ignition transformers.

S. T. JOHNSON CO., 940 Arlington Ave., Oakland 8, Calif.—Booths 717-719

In attendance: D. E. Johnson, Al Dimick, E. E. Jensen, Robert P. Johnston, W. E. Lees, W. S. Harlacher, William Thoms, Earl Cox, A. V. Leudemann.

Exhibiting: Commercial, industrial and residential oil and combination oil-gas burning equipment.

New Products: Model 53 metering pump, rotary burner.

KAUSTINE FURNACE & TANK CORP., Perry, N. Y.—Booths 324-325

In attendance: J. B. Mollnow, Sr., J. B. Mollnow, Jr., R. E. Preine, Maurice Gutman, Harry Oxenreider, W. F. Stahl.

Exhibiting: Oil fired highboy, lowboy, suspended and counterflow furnaces.

New Products: Suspended furnace.

KENT CO., INC., 167 Canal St., Rome, N. Y.—Booth 312

In attendance: C. E. Clifford, L. L. Steele, G. W. Blanchard, P. T. Hugues, J. Hugues. Exhibiting: Double suction furnace cleaner.

KLEMM PRODUCTS DIV., KLEMM AUTOMOTIVE PRODUCTS CO., 1718 N. Damen Ave., Chicago 47, Ill.—Booth 356

In attendance: Harry G. Johnson, I. Warren Chase, C. W. Byrum, George Berger, W. H. Wilkinson, R. B. Timmons, Lowell McCord, J. R. Starnes, R. G. Glass, H. J. Waff, Jr., Robert F. Stepback, Jack H. Fisher.

Exhibiting: Fuel oil filters for domestic heating plants, water filters for domestic well pumps and individual residences.

New Products: Oil filters with built-in shut-off valves, domestic water filter.

LAKE CHEMICAL CO., 3052 W. Carroll Ave., Chicago 12, Ill.—Booth 363

In attendance: B. Lytton, L. Aronberg, C. Kleiman, A. H. Cahn, B. Ball, J. Thomas, M. Lefler, M. Horrigan.

Exhibiting: "Pipetite-Stiks," "Flux-Stik," "La-Co" fluxes, "Plumber Krak-Stik," "Oylite-Stik."

New Products: "Oylite-Stik" for quick emergency sealing of oil leaks, cracks, etc., in welds of fuel oil containers, oil storage tanks, pipes, etc.

MANVILLE BOILER CO., INC., Hackettstown, N. J.—Booths 271-272

In attendance: B. Mandelburg. Exhibiting: Steel house heating boilers, packaged units.

New Products: Series "R" packaged units.

MARIETTA METAL PRODUCTS CORP., P. O. Box 66, Marietta, Pa.—Booth 455**MAY FUEL OIL CORP., 1500 Russell St., Baltimore 30, Md.—Booth Q**

In attendance: L. H. Immler, J. A. Amer, J. O. Miller, E. R. Schuelke. Exhibiting: Burners, boiler-burners, furnace-burners.

New Products: "Econ-O-May" burner, boiler-burner, furnace-burner.

MCDONNELL & MILLER, INC., 3500 N. Spaulding Ave., Chicago 18, Ill.—Booth 301

In attendance: E. N. McDonnell, Richard Berry, George La Roi, Nils Swanson, J. W. Ramsay, Howard Peary.

Exhibiting: Safety devices for steam and hot water.

New Products: Pressure relief valves.

MERCOID CORP., 4201 W. Belmont Ave., Chicago 41, Ill.—Booth 524

In attendance: J. W. Owens, H. C. Courteol, I. E. McCabe, V. S. Krale, W. E. Jones, W. K. Stauffer, R. F. Fisher.

Exhibiting: Mercury switch equipped controls for temperature, pressure, liquid level, differential, mechanical movement.

New Products: "Tork Rod" liquid level control.

MICROTRON CORP., 615 Fugate Ave., Charlotte, N. C.—Booth 961**MINNEAPOLIS-HONEYWELL REGULATOR CO., 2735 Fourth Ave., S. Minneapolis 8, Minn.—Booths 11-13-15**

In attendance: Paul Wishart, Tom MacDonald, Kent Wilson, Karl Schick, Ralph Allen, John McCardle, Tom Reed, Herb Bissell, John Young, Arnold Michelson, Fred Kaiser, Herb Williams, William Brown, William Dobie, R. Kepel, Don Reilly, Al Koch, John Dorsey, Gunnar Hayes, George Loper, Merritt Eusey, George Maves, Charles Cochran, D. J. Peterson, Jack Tracy, George Hoeftel, H. Evans, Don Grant.

Exhibiting: Electronic flame guard combustion control systems, year 'round heating and cooling control systems, electronic "Modu-flow" control systems, residential hot water and warm air oil burner control systems.

New Products: "Honeywell Round" thermostat.

MONARCH MFG. WORKS, INC., 2501 E. Ontario St., Philadelphia 34, Pa.—Booth 513

In attendance: T. W. Murphy, E. B. Frame, R. F. Stone, J. M. Carroll, Mr. and Mrs. C. E. Fink, J. G. Underwood, E. S. Gallagher.

Exhibiting: Oil burner nozzles, combustion heads, flame mirrors, nozzle boxes, regulating valves, strainers.

New Products: Flame inspection mirrors.

MORRISON STEEL PRODUCTS, INC., 601 Amherst St., Buffalo 7, N. Y.—Booth 921

In attendance: J. Farrar, J. Seals, C. Stahla, S. Neide.

Exhibiting: Summer air conditioner, conversion oil burner, oil fired forced warm air furnaces.

New Products: Summer air conditioner, conversion oil burner.

MORSE-SMITH-MORSE CO., 165 Dexter Ave., Watertown 72, Mass.—Booth 512

In attendance: Robert P. Johnston, John C. Dieselman.

Exhibiting: "Fiamomatic" safety valves, filters, thermal switches, vent caps, tank gages, fill boxes, fill caps.

New Products: Fill boxes, fill caps.

NATIONAL AIROIL BURNER CO., 1284 E. Sedgley Ave., Philadelphia 34, Pa.—Booths G & I

In attendance: W. A. Horko, G. M. Bitterlich, D. L. Whittemore, E. H. Schraeder, R. W. Reamer, J. H. Dunn, E. P. Bailey, Jr., J. F. Straitz, Jr.

Exhibiting: Commercial, industrial and residential oil burning equipment; industrial gas and oil burning equipment; rotary oil burners; residential boiler-burner and furnace-burner units.

New products: "Honeycomb Bridgewall" combustion chamber.

NATIONAL RADIATOR CO., 221 Central Ave., Johnstown, Pa.—Booth 559

In attendance: C. M. Baumgardner, J. W. LeRoy, C. J. Philage, R. S. Doherty, P. J. Bracken, J. H. Johnston, F. R. Kriebel.

C. A. Piez, M. J. Cianciulli, L. M. Lyall, W. J. McDougal.

Exhibiting: Oil fired residential and small commercial heating equipment, including boilers, baseboard, convectors, oil burners.

New Products: "Packet Model K" — an oil fired heating unit and domestic hot water supply in one assembly.

OIL HEATING ECONOMY CORP., 1214 Bennington St., East Boston, Mass.—Booths 1051-1052

In attendance: E. B. Glendenning, S. C. Patterson, H. Harsch, H. Wurfel, E. Leonard.

Exhibiting: Shell combustion heads, spiral converter for pot type burners, boiler water filters, air filters for pressure atomizing burners, oil filters.

New Products: Combustion heads, spiral converters, boiler water filters, air filters, oil filters.

C. A. OLSEN MFG. CO., Elyria, O.—Booths 160-162

In attendance: E. P. Hayes, J. Crombie, W. H. Olsen, E. J. Marre, J. P. Cullin.

Exhibiting: Year 'round air conditioning units, winter air conditioning units, gravity furnaces, horizontal furnaces.

New Products: Year 'round air conditioners.

J. V. PATTEN CO., 550 DeKalb Ave., Sycamore, Ill.—Booth 251

In attendance: Don C. Patten, John H. Patten, A. A. Boyle, E. H. Lambert, L. R. Williams, Wallace Landau.

Exhibiting: Suspended, basement, highboy upflow, highboy downflow furnaces.

New Products: Horizontal suspended furnaces.

PENN CONTROLS, INC., Goshen, Ind.—Booth 724

In attendance: R. S. Penn, E. B. Maire, R. H. Luscombe, K. W. Cash, R. V. Clark, Carlos Morgan, E. R. Tassin, E. A. Price, A. W. Barr, George Sander, A. L. Rubel, H. Gray, J. M. Moravec, R. Persons, H. Shilling, A. B. Ralph, F. X. Fessler, J. M. Kinney, E. B. Corbett, J. Forbes, J. M. Garrett, A. W. Walter, Don Peters, Ivan Stepnich, R. Eichman, J. McCaffrey, R. Young.

Exhibiting: Automatic controls for heating and cooling.

New Products: Dual air conditioning thermostat, air conditioning panels, horizontal room thermostat, dual refrigeration control with lockout on both high and low pressure, cooling tower control, two piece water regulators.

THE PENNSYLVANIA CO. FOR BANKING & TRUSTS, 1500 Chestnut St., Philadelphia 1, Pa.—Booth 917

In attendance: John W. Yust, John M. Drummy, Arthur S. Jarvis, Charles Harkins, Charles M. Suppée.

Exhibiting: Information on dealer financing.

PERFEX CORP., 500 W. Oklahoma Ave., Milwaukee 7, Wis.—Booths 4-5

In attendance: C. E. Lewis, V. R. Tate, E. G. Spall, M. K. Bowman, A. G. Butler, M. R. Eastin, P. F. Neess, J. W. McGuire, T. A. Ramey, H. D. Cook, J. Deubel, C. B. Soper, H. Cameron, G. Williams, Jr., H. Hackett, Jr., W. L. Mayo, Ray Horan.

Exhibiting: Automatic temperature controls for heating, air conditioning appliances.

New Products: "Perfxray" oil burner primary control.

PETRO, 3170 W. 106th St., Cleveland 11, O.—Booths 451-453

In attendance: G. H. Martinik, J. E. O'Donnell, L. V. Moore, A. G. Barry.

Exhibiting: Domestic burners and furnaces, industrial oil burner forced draft package, industrial heavy oil burner, window cooling unit, central cooling unit.

New Products: Industrial oil burner forced draft package unit.

PREFERRED UTILITIES MFG. CORP., 1860 Broadway, New York 23, N. Y.—Booths 752-754

In attendance: R. S. Bohn, J. S. Kaplan, W. H. Bohn, J. R. Arden.

Exhibiting: Horizontal rotary oil burners, unit steam generators, oil and gas fired conversion packaged fuel units, oil burning specialties.

New Products: "Thermapak" — a self-contained horizontal rotary fuel oil burning system.

PRICE FIREPLACE HEATER & TANK CORP., 147 W. Austin St., Buffalo 7, N. Y.—Booth 111

PULLMAN VACUUM CLEANER CORP., 33 Allerton St., Boston 19, Mass.—Booth 269

In attendance: Robert J. Berns, Ed Green, Norman Ruby, Alex McCall, Harold Goodwin.

Exhibiting: Furnace and boiler vacuum cleaner, accordion vacuum cleaner hose.

New Products: Model 90 furnace cleaner.

PUROLATOR PRODUCTS, INC., 970 New Brunswick Ave., Rahway, N. J.—Booth 703

In attendance: George Owens, Erland L. Sandberg.

Exhibiting: Oil burner fuel filters, bulk fuel filters.

QUIET HEET MFG. CORP., 46 Oliver St., Newark 5, N. J.—Booth 919

In attendance: E. M. Peters, H. M. Spitzer, S. L. Peters.

Exhibiting: Oil burners, residential air conditioners.

New Products: Residential air conditioner.

RCS TOOL SALES CORP., 200 Moen Ave., Joliet, Ill.—Booth 869

In attendance: Thomas M. Sweeney, James A. Kinsella, E. Russell Meyers, Fred W. Fisher.

Exhibiting: "Super Saw" portable power saw and blades, "Korner King" right angle drill attachment, "Super Speed" bits.

RADIANT UTILITIES CORP., 8817 18th Ave., Brooklyn 14, N. Y.—Booth 371

In attendance: Arthur A. Marcus, Jacob G. Goldberg, Julius S. Goldberg, Joseph Bloom.

Exhibiting: Oil burners.

New Products: Laundry tray pump, sump pump, low pressure oil burner with dial-setting meter.

RADIO CORP. OF AMERICA, ENGINEERING PRODUCTS DIV., Front & Cooper Sts., Camden, N. J.—Booth 319

In attendance: P. A. Greenmeyer, D. L. Pearlstone, R. C. Newcomb, H. F. Levy, R. C. Dubois, H. G. Boyle, E. F. Herche, R. J. Schaeper, M. S. Reutter, C. M. Lewis, R. H. George.

Exhibiting: Two-way radio communication systems between office and service and delivery trucks.

RAY OIL BURNER CO., Atlantic Seaboard Div., 629 Grove St., Jersey City 2, N. J.—Booth 709

In attendance: F. X. Fitzpatrick, Raymond P. Flass, Carl Draper, Russell C. Westover, Jr., Forrest J. Beard, also field representatives.

Exhibiting: Horizontal rotary combination gas-oil burner, pressure atomizing combination gas-oil burner, dual oil pump set, forced draft packaged burner for oil, gas or combination gas-oil firing.

REPUBLIC & GENERAL HEATING PRODUCTS, 7426 State Rd., Philadelphia 36, Pa.—Booth 772

In attendance: Paul H. Bunten, William H. Bunten, Walter S. Wisniewski, Joseph E. Myers, Ray Donley, John Ickeringill, Charles Rahl, Albert Companaro, Pat Companaro.

Exhibiting: Domestic steel boilers, oil fired winter air conditioners, baseboard radiation, convector radiation.

ROCHESTER MFG. CO., INC., 100 Rockwood St., Rochester 10, N. Y.—Booth 372

In attendance: C. L. Hastings, J. W. Kershaw, Daniel Freedman, Samuel Skner, Martin Brown, William J. Debler, Sr., William J. Debler, Jr.

Exhibiting: Weatherproof oil tank gage, test kits, vacuum gages, pressure gages, stack thermometers.

SCULLY SIGNAL CO., 174 Green St., Melrose 76, Mass.—Booth 1

In attendance: F. P. Scully, Carl A. Goddard, W. G. Rowell, A. F. Gray, F. P. Scully, Jr., M. Reis, H. Forrest, F. S. Bartlett.

Exhibiting: "Ventalarm" signal, "Ventalarm" gage, tank gages, "FasFill" connectors, throttle regulator, tank spout.

SHELL OIL CO., 50 W. 50th St., New York 20, N. Y.—Booth 901

In attendance: Geo. Stevens, Al. Mickle, E. Kessler, T. J. Clement, W. Brett, Harold Hunt, J. L. Minner, C. M. Mockler.

Exhibiting: Furnace oil with FOA-5X, "Sonitor."

SILENT GLOW OIL BURNER CORP., 850 Windsor St., Hartford 5, Conn.—Booth 1067

In attendance: R. M. Sherman, D. R. Sherman, A. R. Birkins, Fred Quattromani, E. J. Delucas, F. W. Hallgren, F. N. Scott.

Exhibiting: Conversion burners, boiler-burners, warm air units.

New Products: "Coronation" burner.

SINCLAIR REFINING CO., 5 W. 48th St., New York 20, N. Y.—Booths 112-113

In attendance: Richard H. Nightingale, John B. Burgoyne, Charles B. Journey, Jr., Edward C. Conine.

Exhibiting: "SuperFlame" fuel oils.

New Products: "SuperFlame" and "Anti-Rust" fuel oil.

SKUTTLE MFG. CO., Milford, Mich.—Booth 156

In attendance: R. W. Geisler, Carl Theobald, Robert Champkin, James Faulkner, William Davis, Walter Stamberger, Vincent Devine.

Exhibiting: Humidifiers.

New Products: Trunk-line humidifier.

A. O. SMITH CORP., Kankakee Works, Kankakee, Ill.—Booth 317

In attendance: W. T. Halket, J. E. Akehurst, W. W. Ivings, W. A. Dunn, R. L. Fisk, H. S. English, W. Fields, Jr., G. A. Walker, J. G. Irwin, Jr., K. O'Gorman, J. S. McCollough, P. P. Toth, C. W. Johnson, S. J. Burbank, W. B. Furlong, S. E. Wolkenheim, R. J. Shepherd, J. S. Robinson, K. E. Loegren, W. C. Olsen.

Exhibiting: Year 'round air conditioner, "Burkay" commercial water heater, "Permaglas" PG-45, "Permaglas" heating equipment.

New Products: Year 'round air conditioner, "Burkay" glass lined water heater, "Permaglas" 45 gallon water heater.

H. B. SMITH CO., INC., 57 Main St., Westfield, Mass.—Booth 713

In attendance: Thomas C. O'Connor, Leo Sudhaus, Edward J. Weber, Guy F. Smith, John J. Poyatt, Trevor Jackson.

Exhibiting: Cast iron boilers.

SPARKLER MFG. CO., Mundelein, Ill.—Booth 171

In attendance: G. Harry DeGraw, J. M. Hayman.

Exhibiting: Fuel oil filters.

SPENCER HEATER-LYCOMING DIV., AVCO MFG. CO., 652 Oliver St., Williamsport, Pa.—Booths 862-863

In attendance: E. I. Boardman, C. W. Shaffer, K. E. Schooley, C. R. Miller, R. R. Adams, E. L. Mahl, M. Vicchiarelli, D. Reinhardsen, N. Cott, R. Fagan.

Exhibiting: Oil burner-boiler unit, divided low waterline boiler.

New Products: "Suburban" oil burner-boiler unit, "LW" divided low waterline boiler.

WM. STEINEN MFG. CO., 43 Bruen St., Newark 5, N. J.—Booth 969

In attendance: Jess Tankel, Lawrence Knapp, Robert Hundley.

Exhibiting: Draft regulators, oil burner nozzles, inspection mirrors, nozzle kits, nozzle storage cabinets.

STEWART-WARNER CORP., U. S. MACHINE DIV., Lebanon, Ind.—Booths 100-102

In attendance: C. A. Potts, W. E. Blake, Robert C. Hulse, Walter Leander, Carl Ridgle, Les Funk, M. J. Smith, J. W. Stevenson, Robert Skarda, John Phelan, Willard Zehr, Ed. Kenerson, Wm. MacNeil.

Exhibiting: Warm air furnaces, cast iron and steel boilers, low and high pressure burners, wall furnaces, universal furnaces, room air conditioners, central air conditioners.

New Products: New line of warm air furnaces, wall furnaces, room and central air conditioners.

SUNBEAM AIR CONDITIONER DIV., AMERICAN RADIATOR & STANDARD SANITARY CORP., Bessemer Bldg., Pittsburgh 22, Pa.—Booth 0

In attendance: T. W. McNeill, W. H. Baker, Jr., H. M. Carnahan, W. W. Woodroof, W. G. Senft, R. Henry Shine, R. J. Berkshire, C. M. Hoover, R. D. Kishbauch, H. E. Rossell, Jr.

Exhibiting: "Winterline" counterflow winter air conditioners, "Winterglo" utility winter air conditioners, "Winterway" basement winter air conditioners, "Mayfair" summer air conditioners.

New Products: Counterflow, utility and basement winter air conditioners, summer air conditioners.

SUNDSTRAND ENGINEERING CO., 1325 7th St., Rockford, Ill.—Booth 674

In attendance: R. H. Gustafson.

Exhibiting: Oil burners, forced warm air furnace, air conditioning unit.

SUNDSTRAND MACHINE TOOL CO., 2421 11th St., Rockford, Ill.—Booths 659-661

In attendance: C. W. Lang, O. E. Mayfield, J. F. Griffey, W. R. Kiefer, R. E. Stevens, B. L. Soderberg, B. L. Douglass, Sereno Ferraro.

Exhibiting: High and low pressure oil burner fuel unit.

New Products: Air-oil fuel unit.

SUN-RAY BURNER MFG. CORP., 139-24 Queens Blvd., Jamaica 35, N. Y.—Booths 309-311

In attendance: Gabe Marin, Martin Sones, Alfred Luft, Robert Adcock, Alfred Metzger, Jack Maxwell, Herbert Fowler, Burt Vickery, Marvin Hendler, Meyer Bressen, Emmons Nickerson, William Oliver, Frank Sieffert.

Exhibiting: Gun type oil burners, shell combustion head models, vertical flame and conventional high pressure oil burners.

New Products: Gun type burner, vertical flame burner, universal flange.

TACO HEATERS, INC., 137 South St., Providence 3, R. I.—Booths 274-275

In attendance: J. Balter, R. H. Chaffee, J. R. Murphy, W. J. Sliney, W. E. Johnson.

Exhibiting: Heat exchangers, circulating pumps, chillers, relief valves, air valves, pipe fittings, air-scoops, flow control valves.

THATCHER FURNACE CO., Center St., Garwood, N. J.—Booths 367-369

In attendance: R. M. Cook, M. C. Beard, S. B. Leigh, G. R. Fleming, J. J. Keefe, J. Sheehan, J. Kusarik, R. Evers, I. Vail, J. Leeson.

Exhibiting: Summer air conditioners, oil fired winter air conditioners, boilers, conversion burners.

New Products: Oil fired horizontal winter air conditioner.

H. A. THRUSH & CO., W. 8th at N. Jefferson St., Peru, Ind.—Booth K

In attendance: Geo. H. Fox, E. D. Noland, G. O. Johnson, W. J. Johnson, L. D. Grose, R. E. Clegg, T. E. Fahy.

Exhibiting: Hot water heating specialties.

TIMKEN SILENT AUTOMATIC DIV., TIMKEN-Detroit AXLE CO., 207 E. Washington St., Jackson, Mich.—Booth 552

In attendance: R. M. Marberry, R. E. Loebell, F. H. Haugen, S. T. Ramey, M. F. Robbins, F. M. Jordan, J. H. Swallow, C. E. Wattes, J. E. Fahl, C. L. Morgan.

Exhibiting: Pressure type oil conversion burner, wall flame oil conversion burner, oil boilers, oil furnaces.

New Products: Year round air conditioning unit.

TORIDHEET DIV., CLEVELAND STEEL PRODUCTS CORP., 16025 Brookpark Rd., Cleveland 11, O.—Booths 653-654-655

In attendance: W. J. Smith, Jr., R. J. Lucas, D. W. Rouse, L. F. Dienst, J. A. Lappin, L. D. Clough, D. E. Sullivan.

Exhibiting: "Wall Flame" furnaces, counterflow "Wall Flame" furnaces, gun fired furnaces, gun fired cast iron boilers, "Wall Flame" hot water heater, "Wall Flame" conversion burners, gun conversion burners.

New Products: Counterflow "Wall Flame" furnace, "Wall Flame" hot water heater, gun fired cast boiler-burner unit.

TORRINGTON MFG. CO., 70 Franklin St., Torrington, Conn.—Booth 467

In attendance: Dudley B. Robinson, Robert M. Gordon, C. A. Hathaway, William E. Cashen, Leonard C. Lindstrom, Roger T. Lyman, James Fry, Lucien Henniquin, Anthony N. Casadei, Thomas Oliver, William Boales, Dewey Long, A. C. Doty, Jr.

Exhibiting: Blower wheels, fan blades, slinger ring fan blades, rubber bushed hubs, shaded pole hubs.

New Products: Blower wheels.

TURB-O-TUBE FURNACE, INC., 980 Elliott St., Buffalo 9, N. Y.—Booth 255

In attendance: J. B. W. Carmichael, D. L. Haynes.

Exhibiting: Residential forced air furnaces.

TUTHILL PUMP CO., 939 E. 95th St., Chicago 19, Ill.—Booth 364

In attendance: J. D. Young, W. F. Rye, H. C. Corbin, Parker H. Devlin, John C. Magnus.

Exhibiting: Rotary pumps for domestic and industrial oil burners.

UNION ELECTRIC & MFG. CO., 1057 Summit Ave., Jersey City 7, N. J.—Booth 104

In attendance: Charles Rapoport.

Exhibiting: Ignition transformers.

V & E PRODUCTS, INC., Schuylkill Haven, Pa.—Booth 1049

Exhibiting: Vertical and horizontal steel water tube boilers.

New Products: "Wall Flame" boilers.

WALKER MFG. & SALES CORP., 1701-17 Penn St., St. Joseph 1, Mo.—Booth 771

In attendance: Andrew H. Ziph, Raymond D. Denning.

Exhibiting: Automatic draft regulators, industrial controls, chimney caps, ventilators.

New Products: "Venturi-Top" chimney cap.

WALTON LABORATORIES, INC., 1186 Grove St., Irvington 11, N. J.—Booth 769

In attendance: William Feldermann, Jack Feldermann, J. R. Lewis, H. Puttbach.

Exhibiting: Portable room humidifiers, table and automatically controlled console humidifiers, plenum type humidifiers with positive discharge.

New Products: Model "WF" humidifier.

WARNER LEWIS CO., DIV. OF FRAM CORP., 817 N. Lewis Pl., Tulsa 8, Okla.—Booth 110

In attendance: J. N. Fitzgerald, T. R. Bradley.

Exhibiting: Water separators and filters for fuel oil.

WATERFILM BOILERS, INC., 36-40 New York Ave., Jersey City 7, N. J.—Booth 871

In attendance: K. Hanson, V. Butler, John Deane.

Exhibiting: Oil fired "Venko" packaged unit, gas fired "Venko" packaged unit, baseboard radiator units.

New Products: Steel baseboard radiator.

WAYNE HOME EQUIPMENT CO., INC., 801 Glasgow Ave., Ft. Wayne 4, Ind.—Booth 374

In attendance: J. J. Thurston, O. B. Porte, B. L. Clarke, C. V. Copeland, J. E. Nace, N. G. Berghoff, B. G. Duer.

Exhibiting: Oil winter conditioners, oil boiler-burner units, high and low pressure conversion oil burners.

New Products: "Dial-O-Meter" low pressure oil burner.

WEBSTER ELECTRIC CO., 1900 Clark St., Racine, Wis.—Booth 573

In attendance: B. T. Wiechers, J. H. Lahay, H. B. Hastings, Jr., L. E. Woolf, R. Toellner, W. Wensell, P. Maurice, F. Tuttle.

Exhibiting: Electric fuel units, electric ignition transformers, "Delaytrol."

WEIL-McLAIN CO., Michigan City, Ind.—Booth 874

WHITE-RODGERS ELECTRIC CO., 1209 Cass Ave., St. Louis 6, Mo.—Booths 304-305

In attendance: L. F. Blough, E. E. Harwood, R. A. Sherer, E. C. Robinson, E. A. Hartnett, A. E. Petersen, Eric Hook, Chas. Moreng, Patrick McTeigue.

Exhibiting: Controls for oil heating, including primary, warm air, hot water, relays and other controls.

New Products: Triple action hot water control.

WILLIAMS DIV., EUREKA WILLIAMS CO., DIV. HENNEY MOTOR CO., INC., 1201 E. Bell St., Bloomington, Ill.—Booth 562

In attendance: C. G. Branch, T. H. Green, D. F. Motz, M. P. Langdon, H. C. Perry, J. H. Skaggs, H. H. Hackett, S. J. Dowling, K. F. Muldoon, H. H. Hurston, V. E. Reed, E. L. Dawkins, R. A. Davis, V. A. Krouse, F. Brown, T. E. Schofield, H. L. Farrow.

Exhibiting: Boiler-burner units, furnace burner units, conversion burners, year round air conditioning unit.

WINDMASTER CORP., P. O. Box 776, Columbus 16, O.—Booth 126

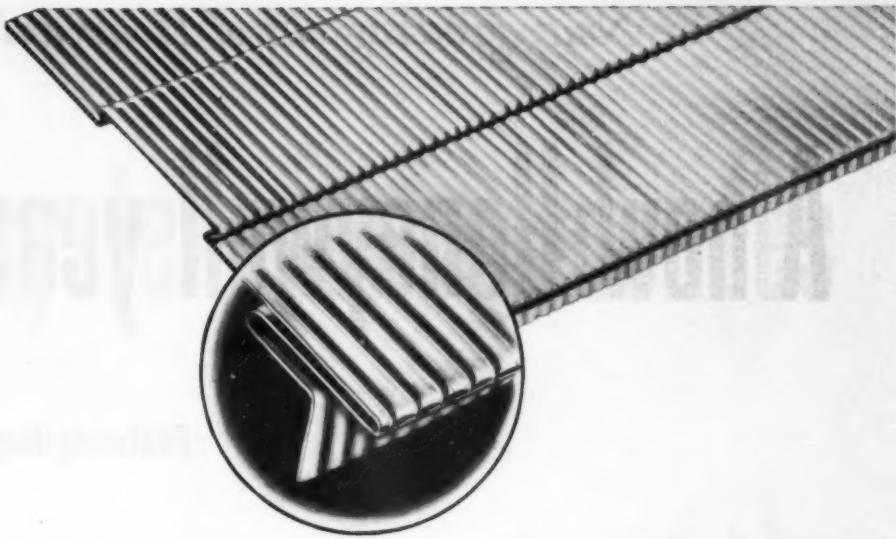
In attendance: Dan Lynch, R. Wendell Franks, Larry Cooper, Daniel Freedman, O. W. Dobson, Edward Black, Walter MacPherson, Jack E. Halter, P. J. Halter, Jas. Maxwell. Exhibiting: Draft controls.

WORTHINGTON CORP., Harrison, N. J.—Booth 263

In attendance: P. H. Shaw, J. C. Woodsen, J. P. McArthur, F. J. Blacker, M. M. Lawler, E. R. Michel.

Exhibiting: Year round residential air conditioner for heating and cooling, window air conditioner.

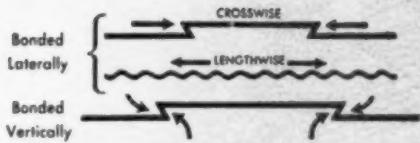
New Products: Year round residential air conditioner for gas or oil heat.



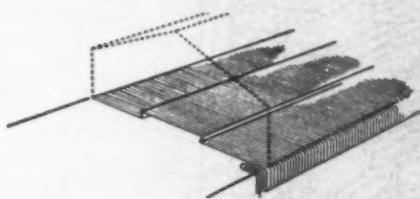
Build your CAP FLASHING INTO the wall!

for easy installation . . . perfect weather seal

Above you see the built-in receiver of Chase One-Piece Thru-Wall Copper Flashing. Note how it permits cap flashing to be built *into* the wall—not merely nailed, mopped or hung *outside*, subject to theft, damage, breakage or leaks. There are no complicated pre-formed locking devices here—the Chase receiver is easily closed by the contractor himself. Result: lock is tight, flush, *tailored to job*. And...because cap flashing can be installed *after* wall, base flashing and roof are completed, it can be made of extra-rigid cold-rolled copper! This eliminates need for locking cap flashing to base flashing.



Notice how design binds masonry three ways—and insures watertight interlock between flashing sections.



Continuous transverse channels provide for fast drainage *plus* expansion and contraction. Flashing is automatically positioned for tight fit by guide on lower inside edge.

Find out more about the best flashing made. Get in touch with your Chase Warehouse or Sales Office soon!

Chase

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper

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Atlanta	Cincinnati	Detroit	Los Angeles	New Orleans	Providence	Seattle
Baltimore	Cleveland	Houston	Milwaukee	New York	Baltimore	Waterbury
Boston	Dallas	Indianapolis	Minneapolis	Philadelphia	St. Louis	(Sales office only)

Now, growing out of Honeywell's long years of

A new Honeywell year-around

Featuring finger tip heating-cooling



New T-830 Heating-Cooling Thermostat

Gives complete year-round control. Three manual switches for heating or cooling operation, automatic or constant fan, automatic thermostat control or positive "off." Sturdy bi-metal element. Models of the new T-830 are available for either heating and single stage cooling, or heating and two stage cooling.

*Backed and serviced by Honeywell's
best-by-far nationwide service organization*

experience in heating and air conditioning control

control system for residences

selection at the thermostat location



New W-203
Heating-Cooling Control Panel

Single, pre-assembled unit for year-round control. The new W-203 control panel incorporates terminals for accessories, such as damper motors, cooling tower pumps, solenoid valves, refrigeration pressure controls.



New, More Powerful
M-828C Damper Motor

Increased torque. Highly durable, two-position, uni-directional motor. The motor is used to operate dampers for by-pass air conditioning system.

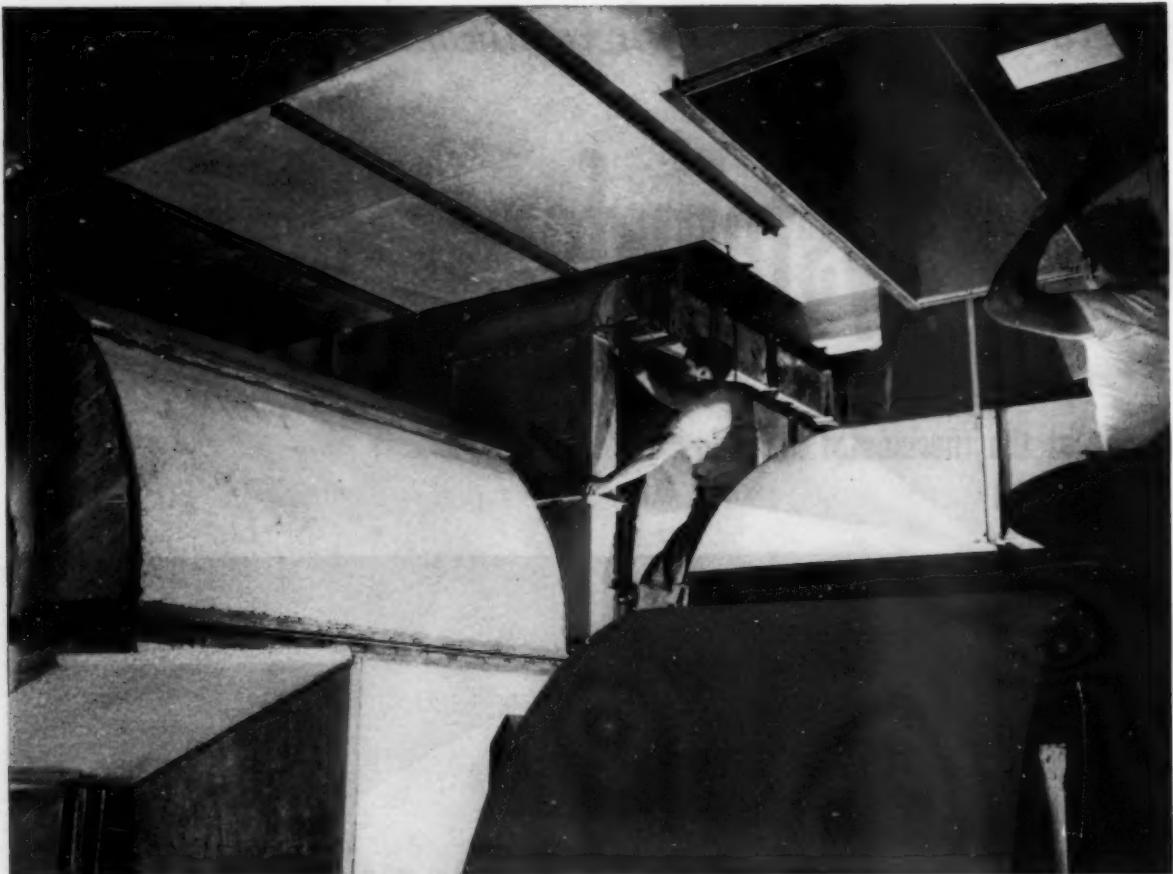
For complete information on heating-cooling thermostats, panels and motors, call your local Honeywell office. Or write to Honeywell, Dept. AA-5-95, Minneapolis 8, Minn.

112 OFFICES ACROSS THE NATION

MINNEAPOLIS
Honeywell



First in Controls



Galvanized Steel Costs Less than Sheets of Other Metals

Compare steel with any other sheet metal on the basis of equal strength and you will find that it costs substantially less. To equal the strength or stiffness of light-gage steel, other metals must be used in relatively thick and expensive gages.

If you compare steel with other metals on the basis of equal weight, again you will see that steel is less expensive. Pound for pound, no other commonly used sheet metal can match the low cost of steel.

Bethlehem galvanized sheets are made from strong, durable steel, either plain or copper-bearing. They carry a tight, uniform coating of zinc to provide superior corrosion-resistance. They look good. They have excellent workability, and they give a professional finish to any sheet-metal job.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

**Bethlehem
GALVANIZED
Steel Sheets**



is something
ALWAYS
missing?

(to cut your profit)



...then switch to the one line that meets every selling need

***EXAMPLE No. 1:** Note

EXAMPLE NO. 1: Not having the right equipment to offer will *never* cause you to lose a sale when you handle Bryant. It's the *most complete line in the industry*—offering you up to 114 separate sales opportunities in the broad range of types and sizes available in Bryant heating, cooling and water heating equipment. Gas furnaces, oil furnaces, conversion burners, boilers, air conditioners, water heaters, space heaters and unit heaters—here is everything you need to meet any prospect's requirement—*profitably*.

Your nearby Bryant Distributor has complete details. It will pay you to call him today.

Bryant Heater Div., Affiliated Gas Equipment, Inc., 17825 St. Clair Ave., Cleveland 10, Ohio

- * 1. The most complete line in the industry
 - 2. Quality products—Competitively priced
 - 3. Established name—Good customer acceptance
 - 4. Broad, attractive profit margins
 - 5. Local distributor warehousing and service
 - 6. Factory district representatives and traveling sales training and service teams





Discover why
CLARAGE
is Superior
Fan Equipment
for . . .

Air Conditioning Units, Cooling
Towers, Evaporative Condensers,
Circulators, etc.

WHEELS

Cast iron hubs have large flanges which stiffen centerplate. Wide range of stock bores. Dynamically balanced. Special constructions available.

HOUSINGS

Die formed and designed for full rated performance. Can be hot dipped galvanized for protection against moisture.

COMPLETE FANS

Eleven standard sizes — capacities from 200 to 10,000 cfm. Built of heavier gauge steel than common practice for longer, better service.

KNOWN quality pays off! You too can profit by using Clarge Type DF fan equipment.

Clarge wheels, housings, and complete fans have proved their worth to numerous manufacturers. Here is equipment designed right, built right to operate year after year with minimum attention.

For full particulars, including dimensions and capacity ratings, request Catalog 603-A . . . or call in the nearest Clarge sales engineer.

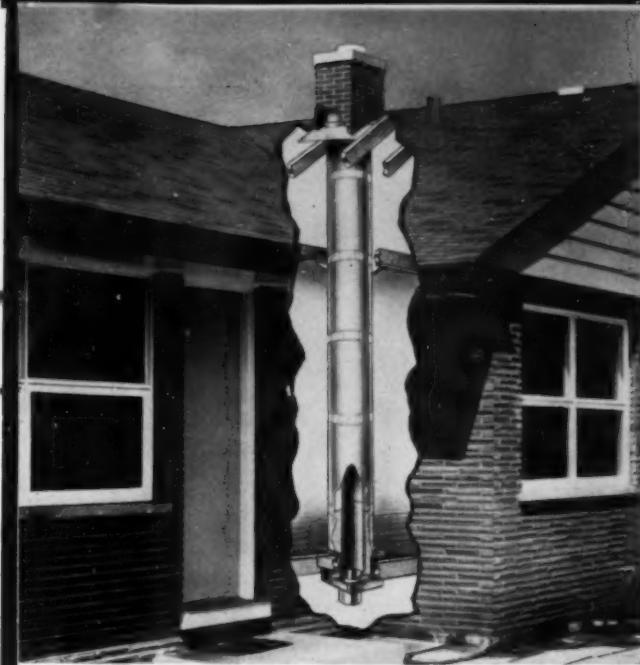
CLARGE FAN COMPANY
Kalamazoo, Mich.

You can Rely on...
CLARGE

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES
IN CANADA: Canada Fans, Ltd., 4285 Richelieu St., Montreal

Headquarters for
Air Handling and
Conditioning
Equipment





Sectional masonry construction of the Van-Packer Packaged Masonry Safety Chimney with "Brick-Panel" Housing is shown in this cut-away view. Van-Packer is listed for all fuels — coal, oil, gas — for all home heating plants and incinerators by Underwriters' Laboratories, F.H.A. and major building codes.



Chimney support with heavy iron support straps is nailed to wood construction members of the floor. Van-Packer installs without special skills.



Flue sections made of $\frac{1}{8}$ " fire clay tile inner lining, 3" vermiculite-concrete insulating wall, and cement-asbestos outer jacket. Here first 2' section is installed in support.

How you can put up a genuine masonry chimney in 3 man hours or less



All parts needed to install the Van-Packer Chimney are delivered to the job completely packaged. Construction delays eliminated. Saves up to 50% on time and material.



Openings quickly prepared in the floor, for the chimney support, and in the ceiling and roof to permit passage of flue (floor suspended method).



Acid-proof, leak-proof cement joins masonry sections up to desired height. Cement comes in easy-to-use plastic squeeze bags. Each joint is secured with aluminum drawband.



Aluminum flashing is installed on the roof. Van-Packer's "Brick-Panel" Housing over its aluminum flashing gives chimney a weathertight seal.



Brick-red cement-asbestos panels are cut to roof pitch, then assembled with corner angle irons and sheet metal screws provided.



Corner angle irons quickly fasten housing to roof. Deep embossed mortar lines retain natural color if housing is painted to match other brick colors.



Aluminum housing cap, chimney pot and refractory rain cap are added to complete installation. Van-Packer develops 34% more draft than standard code brick chimneys.



Massive "Brick-Panel" Housing adds beauty of conventional brick to all homes while saving on construction time and material.

Vp
Van-Packer

PACKAGED MASONRY CHIMNEY
WITH "BRICK-PANEL" HOUSING

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Send for all the facts
on the Van-Packer
Packaged Masonry
Safety Chimney. Ask
for Bulletin 11-E-AF23.





Everybody likes to take bows for a good selling performance, but in the furnace business, the best "applause" is the ring of the cash register. Perfection can help you get into *this* act with:

1. Regulaire*...the only *real* exclusive in the heating business.
2. "On-the-spot" sales assistance by experienced Perfection men.
3. Protection from cut-rate or factory competition in your territory.

Companion air conditioning unit helps you sell a *complete* "comfort" package.

Write us. Perfection Stove Co., 7519-D Platt Ave., Cleveland 4, Ohio.

*Pat. Pending

YOUR HOME DESERVES

Perfection

FURNACES • HOME HEATERS • RANGES • AIR CONDITIONERS • WATER HEATERS

PORTABLE HEATERS



Even rabbits don't multiply as rapidly as AMER-glas Filters. In just three short years over 7,000,000 filters have been turned out. Some are reaching the public as original equipment in both furnaces and air conditioning units. Others are conveniently stocked coast to coast for handy replacement.

Behind this amazing production and complete distribution is a thirty year period of intense preoccupation with the problems of air cleaning equipment. AAF is today the acknowledged leader, and in AMER-glas Filters this leadership has found a new and much needed outlet.

With filter experts always available, AAF produces standard sizes and custom designs with equal ease. If you would like additional information, write today for prompt service.

***AMER-glas FILTERS**

FOR FURNACES AND AIR CONDITIONING UNITS



a product of

AAF

American Air Filter Co., Inc.
355 Central Ave., Louisville 8, Ky.



LOWBOY FURNACE-BURNER UNIT

A handsome, efficient unit, especially designed for either oil or gas firing in low headroom installations. Available in five sizes—the smallest measuring only 22" x 47" x 45 $\frac{1}{4}$ ". Capacities from 65,000 to 160,000 Btu's at the bonnet.

HIGHBOY FURNACE-BURNER UNIT

This unit, too, is fired efficiently with either oil or gas. A minimum amount of floor space is required. Fits perfectly in closet-type installations, basements, garages. Warms, filters, and circulates the air. Size: 22" x 33" x 62 $\frac{3}{4}$ ". Capacities 65,000 and 85,000 Btu's at the bonnet.

HORIZONTAL OIL FURNACE-BURNER UNIT

Hang it or hide it! For this winter air conditioner fits anywhere—in garage, attic, crawlway, or basement. Completely automatic. Available in five models with capacities from 80,000 to 180,000 Btu's per hour.

CONVERSION BURNERS

Especially designed to convert hand-fired furnaces or boilers to highly efficient automatic heating with either oil or gas. Units fit any firebox—get maximum heat from oil or gas burned.

PETRO, 3069 W. 106th St., Cleveland 11, Ohio.
In Canada: 2231 Bloor St. W., Toronto, Ontario.

Please send literature and specification sheets on Petro equipment.

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Firm _____

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Petro

OIL and GAS HEATING

has 'em all

You name it—and Petro's got it. No matter what the need in residential or small commercial heating, there's a unit to fit the requirements. Completeness of the line, plus Petro's *reputation* of over 50 years for dependability and fuel economy, results in more orders . . . more profits.

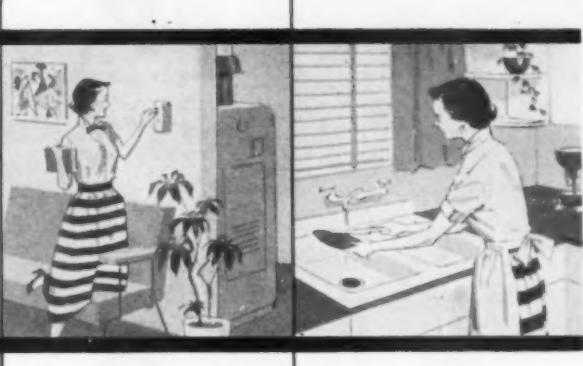
Petro heating units are easy to install, too. They are compact and sturdy, and have easily accessible duct outlets and wiring connections. Send for free specification sheets and information.

**Residential Oil and Gas Burners, Oil and Gas Furnaces and Boilers,
Industrial and Commercial Oil, Gas and
Oil-Gas Combination Burners**

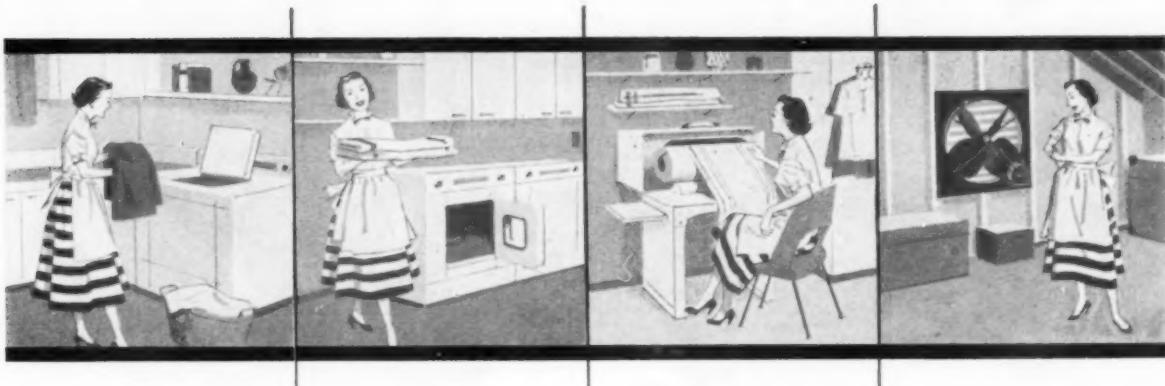
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T.M. REG. U.S. PAT. OFF.

**OVER 50 YEARS OF LEADERSHIP IN
AUTOMATIC HEATING AND POWER EQUIPMENT**



THE MOST IMPORTANT FACTOR IN YOUR BUSINESS...



A COMPLETE LINE OF
RUGGED FRACTIONAL HORSEPOWER APPLIANCE MOTORS

is a *satisfied customer!* That's why it is important to use the best electric appliance motor you can find . . . a Packard Electric motor.

For, when you standardize on motors carrying the world-famous Packard Electric name, you are taking the sure way to customer satisfaction. Appliance manufacturers who have been Packard customers for many years know this to be true. They know, too, there is no substitute for 37 years of motor-building experience.



Packard
REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division
General Motors Corporation
Warren, Ohio

FIELD FAMILY ALBUM

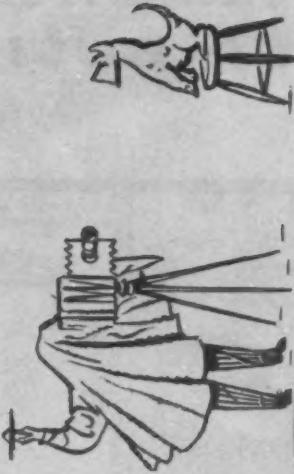
These snap-shots, taken in April, 1954, show father M. Field (below) and his famous family. Each has that familiar Field look, but each is an individual, with a special talent. Photos are, of course, by courtesy of Field Control Division, H. D. Conkey & Company, Mendota, Illinois.



R. Field favorite son with manufacturers of space heaters and ranges



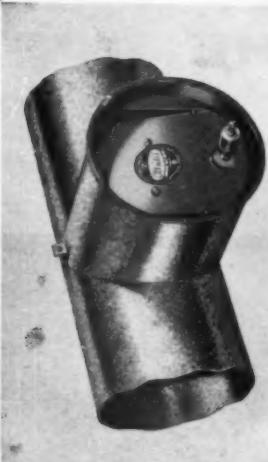
Incinerator Field Fair haired boy with gas incinerator manufacturers



"Scotty" Field so named due to all around economy offered for space heaters and ranges.



* R. C. Field "baby" of the family but already widely known



M. Field head of the family and still top man with manufacturers, jobbers and dealers.

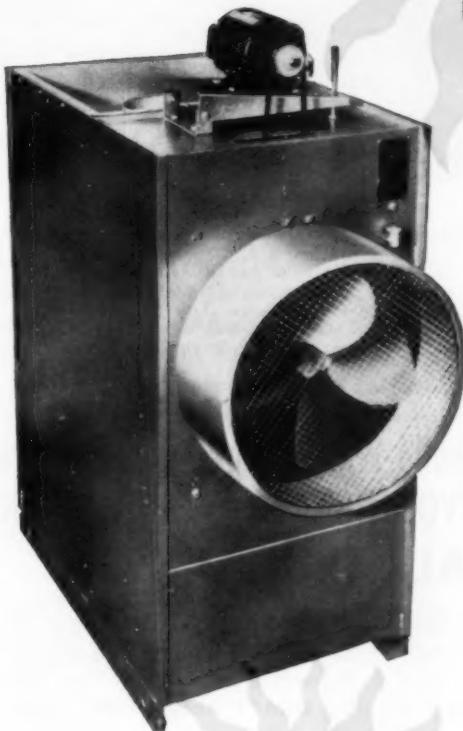


"Barocheck" Field friend of those who fire coal furnaces or boilers

Will you be

free to SELL-
or forced to SERVICE-

in the peak season?



Experienced air conditioning contractors know that they cannot make full profit during the peak season if they are plagued with cooling tower service calls. That's why they overwhelmingly choose Marley Aquatowers for air conditioning services in the 2-60 ton range.

Marley Aquatowers*

consistently deliver peak performance with an absolute minimum of service and repair. Every element in the Aquatower design keeps the contractor's profit in mind. Simple installation . . . ease of maintenance . . . bronze fan bearing bushing with stainless steel fan shaft . . . lifetime redwood filling . . . fans that move air in volume . . . all in the sturdy Marmastic lined case—this is the Marley Aquatower, master tower of the industry.

Aquatowers not only free you from service calls—they conserve selling time. They are pre-sold in the big home and business magazines by the largest advertising program in the industry and backed up locally in many areas with comprehensive newspaper campaigns. The Aquatower line is the *profit* line; see your nearest Marley representative today.

*Trademark Reg.



The Marley Company

Kansas City, Missouri

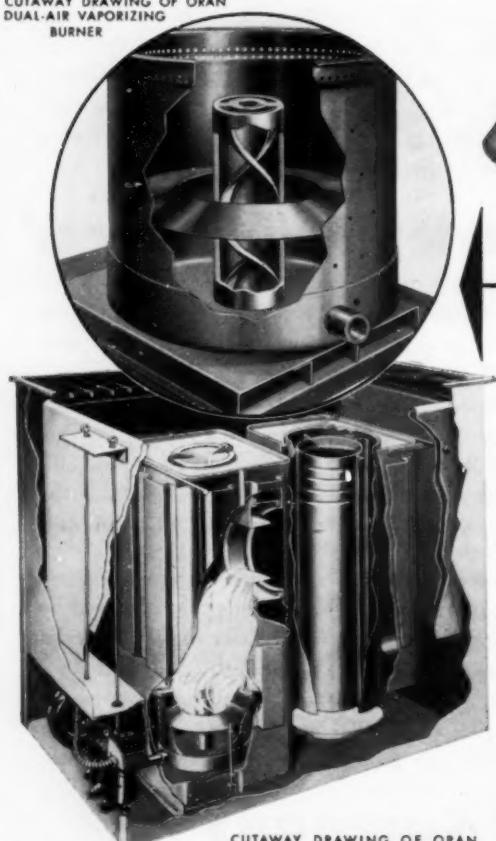
THE SMOKE-ROD TEST PROVES

Oran's New Dual-Air Burner is **SUPER CLEAN**

**THIS ROD MEETS COMMERCIAL
STANDARDS REQUIREMENTS**

This is a 6% smoke rod, which means there is a 94% build-up of carbon on a glass rod inserted in the smoke pipe of an oil furnace with ordinary vaporizing burner for 20 minutes, at .06 draft. This is the acceptable standard which all such burners must achieve to meet commercial standards.

CUTAWAY DRAWING OF ORAN
DUAL-AIR VAPORIZING
BURNER



UNDERWRITERS' LISTED

CUTAWAY DRAWING OF ORAN
MODEL 0-70 DA SUPER, RATED
AT 75,000 BTU. OTHER MODELS
AT 50,000 AND 65,000 BTU.



THIS ROD MEETS ORAN REQUIREMENTS

Here is the same test performed in an Oran Model 0-70DA oil-fired floor furnace with dual-air vaporizing burner. Note that smoke rod is super clean, with perfect light transmission. This test was made at .02 draft, a 67% reduction in draft requirement!

**ALL ORAN Shallo-Well, oil-fired floor furnaces
have the REVOLUTIONARY, CLEAN-BURNING,
DUAL-AIR BURNER**

Here's the authoritative LABORATORY TESTED proof that Oran Shallo-Well, oil-fired floor furnaces with the sensational, new Dual-Air vaporizing burner, burn clean and soot-free, EVEN AT 67% DRAFT REDUCTION. After years of extensive research, Oran now brings you an oil-fired unit that matches the cleanliness of natural gas! Let us send you the complete story on the revolutionary, new Dual-Air burner, and why it makes Oran the unquestioned leader in oil-fired floor furnaces. You can't afford to let another day pass without investigating the Oran Shallo-Well line—your magic key to floor furnace profits! Write, wire or phone us TODAY!



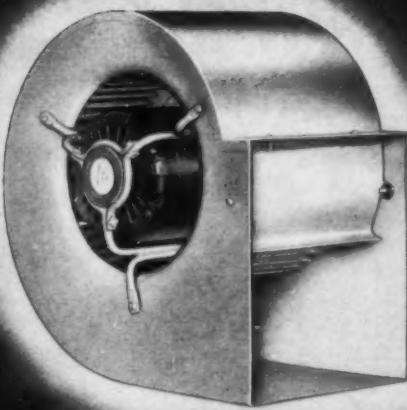
ORAN COMPANY

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the newest *Brundage* development...



INSTALLS IN
ANY POSITION



*ONLY 10-1/2" x 15" x 15-7/16"
YET IT DELIVERS 1150 CFM AT .30 STATIC

*Direct Drive Units in higher and lower capacities also available . . . information upon request.

THE NEW BRUNDAGE 9" DIRECT DRIVE BLOWER

Here is one case where the biggest value comes in the smallest possible package. This new 9" Brundage Blower combines extremely high air handling capacity with a compactness and flexibility to make every cubic inch of equipment work to its fullest.

The internally mounted motor not only insures space economy and, by eliminating all belts and pulleys, it cuts the cost, ends a major maintenance problem . . . a design simplification that pays dividends in many, many years of superior service. To give you complete freedom of design, the 9" Brundage Blower may be fur-

nished with mounting legs which allow you to place the unit in any convenient position . . . with full assurance of peak operating efficiency.

Test a Brundage 9" Blower in your own engineering department. Learn how Brundage design, construction and performance can add a new measure of quality to your products. We will be happy to provide everything you need to make a careful evaluation.

Ask about the Brundage production program. It is planned to simplify your inventory problems and free capital which might be tied up in blower stocks.



BLOWER-FILTER UNITS



BELT DRIVE BLOWERS



BLOWER EXHAUSTERS



SPECIAL BLOWER CABINET ASSEMBLIES



Brundage
COMPANY

PRODUCTS OF
CHARACTER

503 NORTH PARK STREET
KALAMAZOO, MICHIGAN

"INTEGRITY IS OUR TRADITION"

We would like to have further data on:

Direct Drive Blowers

Belt Drive Blowers

NAME.....

TITLE.....

COMPANY.....

ADDRESS.....

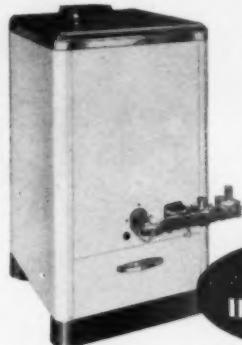
CITY..... STATE.....

All From One Experienced Source

Gas • Oil • Coal-Fired
FURNACES



Four Models of
INCINERATORS



Exclusive
BURDETT
Conversion Gas Burner



High Pressure and
LOW PRESSURE
Oil Burners



If you are interested in increasing your satisfied customers, decreasing your service problems, improving your profits by having something different than just conventional heating equipment to sell, then you should be interested in Freeman Heating Equipment — a complete line from *one* experienced source. See what our new and improved Four-way Incinerators, our new Radi-Heat Gas Burners, our new High and Low

Pressure Oil Burners, and our new complete line of Oil and Gas Fired Furnaces will do for your business. This outstanding line is backed by ninety years experience in the design and production of quality products, including over 25 years *specialized* experience in the design and production of quality heating equipment. Drop us a note today for complete information on Freeman Heating Equipment for your territory.

ILLINOIS IRON & BOLT CO.
CARPENTERSVILLE, ILLINOIS (ESTABLISHED 1864)

Sales Office: 914 S. Michigan Ave., Chicago 5, Ill.

MUST READING

for
the
residential
air conditioning
trade!



ULTRALITE DUCT INSULATION
(Thermal)
and
ULTRALITE DUCT LINER
(Acoustical)

are insulations of long glass fibers specifically designed for air conditioning application. They are light, flexible, resilient, easy to cut with a knife. "Job size" packages are stocked in 72 cities for prompt delivery. Consult the yellow pages for name of your nearest Ultralite distributor.



GUSTIN-BACON MFG. CO.

224 W. 10th St., Kansas City, Missouri

New York • Chicago • Philadelphia • San Francisco • Los Angeles
Houston • Tulsa • Dallas • Detroit • St. Louis



Thermal and acoustical insulation of ducts can "make or break" an air conditioning job. That's why Gustin-Bacon, manufacturers of glass fiber duct insulation for air conditioning, has prepared a new booklet offering suggestions of value to oldtimers, as well as newcomers in the field. Write for your free copy today.

Answers such questions as these . . .

- "Which ducts require thermal insulation?"
- "When should I use a duct insulation with a vapor barrier?"
- "What kind of acoustical treatment do ducts require?"
- "What are the fastest and cheapest methods of applying duct insulation and duct liner?"
- "Do combination units require special duct insulation?"

Mall This Coupon Today!

Please send me your new "How-To-Do-It" folder on duct insulation and duct liner for residential air conditioning.

Please send your brochure on Ultralite Duct Insulation and Duct Liner for commercial and industrial air conditioning.

Name _____

Firm _____

Address _____

City _____ State _____

WHY IT PAYS TO BUY SHEETS and STRIP FROM US



We can fill emergency requirements
with the exact quality you need

You needn't worry when you find you're running out of steel sheet or strip and are unable to complete a production run. You can depend on U. S. Steel Supply to rush the needed steel to your plant or shop immediately. And because of the complete stocks in all our warehouses, you can be sure you'll get steel of exactly the same quality and

specification you were using. So you don't have to lose costly production time when you need extra steel.

All the sheet and strip we sell bear the famous USS trade-mark—your guide to quality steel. Call us for: hot rolled, cold rolled, vitrenamel, galvanized, galvannealed, paint bond, corrugated, long terne sheets, and hot rolled and cold rolled strip steel.

TRIPLE SECURITY

What you want
When you want it
At the right price

U. S. STEEL SUPPLY

DIVISION

General Office
208 So. La Salle St., Chicago, Ill.



Warehouses and Sales Offices
Coast to Coast



UNITED STATES STEEL

When you sell CHRYSLER AIRTEMP
you've got something extra to sell with...



Continuous advertising of ALL CHRYSLER AIRTEMP products helps make Chrysler Airtemp Heating EASIER TO SELL!

In addition to advertising of Chrysler Airtemp Heating, extensive advertising on other Chrysler Airtemp products is constantly increasing acceptance of the Chrysler Airtemp name on all products which carry it.

For example, in this month of May alone, messages on Chrysler Airtemp Room Air Conditioners will appear in national magazines with a combined circulation of 11,720,345. Advertising on Chrysler Airtemp residential air conditioning will reach an additional 8,775,636 people in national magazines—also 300,000 builders, architects and contractors in leading building industry trade journals. Prominent news and business publications will carry the story of Chrysler Airtemp Air Conditioning for buildings to over 1,160,000 readers.

Continuing a broad campaign, the specific

benefits of Chrysler Airtemp "Packaged" Air Conditioning to their particular businesses will be impressed on people through the pages of 29 different trade journals.

In this month, too, as every month, Chrysler Airtemp's popular full-color movie, "It's in the Air," will be shown to thousands of people throughout the country.

The tremendous impact of all this Chrysler Airtemp advertising is an important extra you sell with when you sell Chrysler Airtemp Heating. But only one of many! Check those additional extras described below. Then return convenient coupon for all of the detailed information you should have on the profitable Chrysler Airtemp Franchise.

Check these **7** additional extras which can make your selling job easier—as a Chrysler Airtemp Dealer

Consumer Confidence—People know and respect the Chrysler Airtemp name—associate it with engineering leadership—have complete confidence in the products which carry it.

Double Profit Opportunity—Chrysler Airtemp Cooling, which is so easy to install with the new Chrysler Airtemp Furnaces, gives you the chance to sell Year 'Round Air Conditioning when you install the furnace or later—for a double profit.

Product Leadership—All-new Chrysler Airtemp Furnaces give you exclusive features that you can demonstrate to your prospects in terms of more efficient, more economical automatic heating.

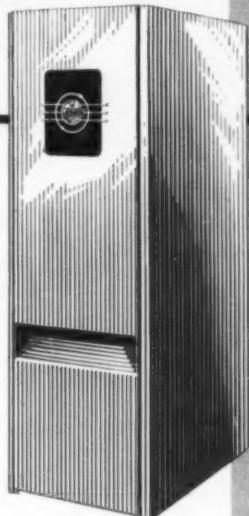
Faster, Easier Installation—Amazing compactness

of design and handy front location of flue outlet combine to permit faster and easier installation. You save valuable man-hours!

8-Year Warranty on new, super-efficient, corrugated-design furnace heat exchanger gives your customers important additional confidence in their choice of Chrysler Airtemp.

Smarter Modern Styling—All-new Chrysler Airtemp Furnaces feature new smarter modern styling—with plenty of eye appeal for homeowners.

More Local Selling Helps—Chrysler Airtemp gives you a broad choice of tested and proved selling helps designed to work for you in your own market over your own name. New 20-minute, full-color movie makes a terrific impression on every viewer!



Hi-Boy Furnace—8 Hi-Boy and 10 Lo-Boy models for gas or oil.

CHRYSLER AIRTEMP

HEATING • AIR CONDITIONING

for homes, business, industry

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Airtemp Division, Chrysler Corporation
P.O. Box 1037, Dayton 1, Ohio

Please send us complete details concerning the
Chrysler Airtemp Franchise.

Name _____

Address _____

City _____ Zone _____ State _____



AA-5-54

Sell automatic space heater control with these DETROIT Add-ons!

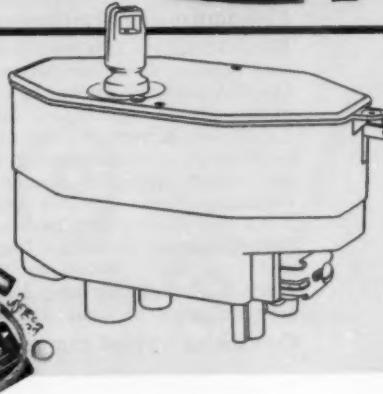
1.

ELECTRICALLY

A NEW AND SMALLER ADD-ON FOR LIMITED HEIGHT SPACE HEATER APPLICATIONS.

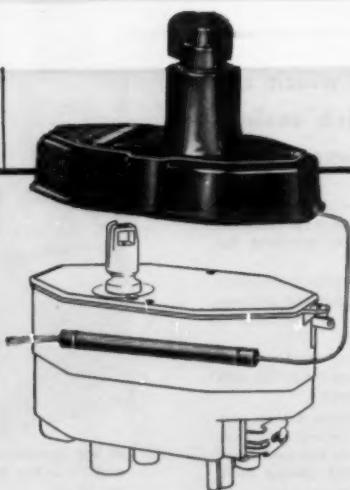
The new Detroit CRC-239-PE Add-on Package provides a simple means of converting any manual CRC-239 Float Valve to room thermostat control. Automatically regulates flow of oil to maintain desired room temperature.

Package includes Room Thermostat, Electrical Add-on, Transformer, wire and staples.



2.

MECHANICALLY



COMPACT, NONELECTRICAL, MODULATING ADD-ON. The CRC-239-MP Add-on Control provides complete thermostatic control of manual CRC-239 Float Valve—with no wiring necessary. Easy to install—attaches directly to top of valve—and controls flow of oil automatically. Easily adjusted dial permits selection of any desired temperature.



DETROIT CONTROLS Corporation

5900 Trumbull • Detroit 8, Michigan • Division of American Radiator & Standard Sanitary Corporation

Representatives in Principal Cities • Canadian Representatives in Montreal, Toronto, Winnipeg—Railway and Engineering Specialties, Ltd.

AUTOMATIC CONTROLS for REFRIGERATION

AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

VICTOR's Cutting You A BIGGER PIECE OF PIE

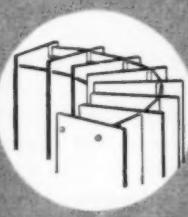


The New Exclusive

VICTOR

F R A N C H I S E

THEY SELL FASTER!



THE FURNACES WITH
PATENTED FUEL-SAVING
FINS

Get in line for your slice of the bigger piece of pie Hall-Neal is giving all VICTOR dealers this year. It's a completely new set-up. You'll make more money per sale and . . . you'll sell more VICTORS! It costs you nothing to find out . . . and, remember that the complete VICTOR gas, oil and coal line, with patented fuel-saving FINS, gives you more exclusive features of genuine merit for closing sales FAST! Don't delay! Ask us about the new VICTOR franchise TODAY.

Do it NOW! There are exclusive VICTOR franchises open, particularly in the South Atlantic and East South Central States. Ask us about the new VICTOR franchise set-up for bigger profits in '54.

Write, Wire or Phone Collect!

Manufacturers of
Quality Furnaces
Since 1890

HALL-NEAL FURNACE CO.

1322-42 N. CAPITOL AVE. • INDIANAPOLIS 7, IND.

WHAT THE ASSOCIATIONS ARE DOING



OFFICERS AND GUESTS attend "get acquainted" night of Fox Valley Association. Above are (*l. to r.*) Frank Schroeder, Charly Bennett, Jack Stowell, George Bushman and Rudy Guenther



SOME OF THE visiting sales representatives to the Fox Valley Association meeting. Seen here are (*l. to r.*) Warren Barr, Jr., Mel Knirsch, Will Pennington and W. R. Wallin

Fox Valley Contractors Entertain Suppliers

EACH YEAR the Fox Valley Furnace and Sheet Metal Contractors' Association holds its "Get Acquainted Night" at which time the suppliers and their representatives are invited to join with the association members in an evening of fun and good fellowship. The purpose of the meeting is to allow the furnace and sheet metal contractors, jobbers and salesmen to get to know each other better under circumstances which remove the "commercial touch" that sometimes appears at joint meetings. To assure this atmosphere, the cost of refreshments, meeting hall rental and other expenses is borne entirely by the contractors' association. When the business meeting opened, 94 persons had registered.

After introduction of the officers and directors by President Jack Stowell, many of the visitors were asked to present any news that was of interest to the warm air heating field. The overall consensus was that business would remain at a high level throughout 1954 and that the dollar volume of warm air heating modernization would continue to increase because home owners are thinking more about the kind of comfort that can be provided only by a warm air heating system.

Officers of the Illinois association and neighboring local associations were introduced by President Stowell. These officers extended invitations to the suppliers to visit with them at their earliest convenience.

Adopt Rule on Vented Wall Heaters

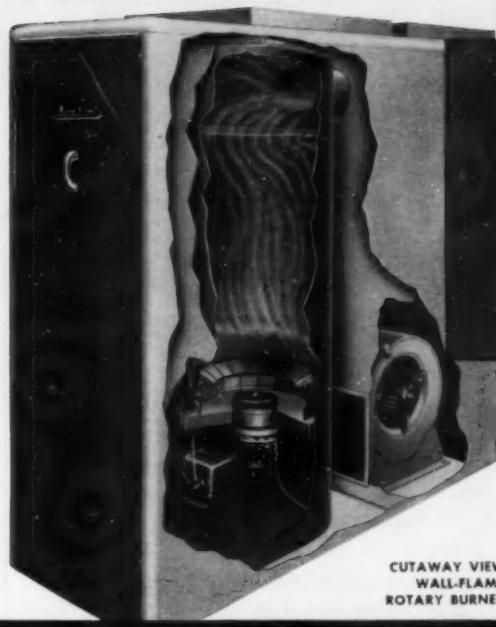
THE INSTITUTE of Gas Heating Industries, Inc., reported recently to its members on a general ruling adopted by the Board of Building and Safety Commissioners of the City of Los Angeles on vented recessed wall heaters.

Scheduled to become effective May 4, the ruling provides:

"Where vented recessed wall heaters are installed in either new or existing construction between wall studding having a nominal 2 × 4 in. dimension, only vent piping listed by an approved testing agency as type BW may be used within the studding space, provided the minimum $\frac{3}{8}$ in. ventilated space is maintained throughout the entire length of the vent. A ventilated sleeve shall be provided in the attic, from ceiling line to a point 12 in. above the ceiling joist and having at least the same venting area as provided by the studding space, so that the vented space cannot become blocked or clogged when the attic space is insulated. Any spacers or other means provided by the vent manufacturer as a part of the approved venting system, designed to insure the proper spacing of the vent pipe within the stud space, must be installed on all vented recessed wall heater installations. This ruling shall be limited to vented recessed wall heaters having a Btu input rating of not more than 50,000 Btu per hr and is not limited to single story construction."

The institute has informed its members that the full text of the recommendation submitted to the Board of Building and Safety Commissioners is on file in the institute office. Inquiries regarding the ruling may be directed to Tom Pinatelli, board advisor to the ordinance committee, or Andy Bourke, chairman of the ordinance committee.

The institute's 1954 engineering course began on Monday, April 19, and classes are being conducted each Monday night at the Southern California Gas Co. auditorium, 820 S. Flower St., Los Angeles. Subjects included



CUTAWAY VIEW
WALL-FLAME
ROTARY BURNER

how fluid heat is built to build your profits

Fluid Heat quality is built into every Fluid Heat unit . . . gives you all the selling points you need to make prospects customers. The Wall Flame Rotary Burner, for instance, has set a new standard of heating efficiency and economy. And this efficiency and economy is well known. That's why it's easy to sell. This Rotary Burner is ingenious in design, rugged in construction, beautiful in appearance and economical in operation.



build your profits

National advertising in publications like *Saturday Evening Post*, *Better Homes & Gardens*, *American Home*, *Living for Young Homemakers*, *House & Garden* and *House Beautiful*, will pre-sell your prospects day in and day out throughout the year. This hard-hitting program, plus the Fluid Heat Sales Manuals and attractive, detailed literature, gives you maximum selling support . . . helps you build sales and profits.



build your profits

Because the Fluid Heat line is so complete . . . featuring pressure burners, Wall Flame Rotary Burners, Warm Air Furnaces and Boiler Burner Units . . . every house is your prospect. Large or small, old or new, every installation can be a Fluid Heat installation. Why? Because you can supply customers with a unit ideally suited to fill every installation requirement. This completeness of line means homeowners and builders alike are your potential prospects . . . you have a natural sales-blazer and profit maker. For more details on a money-making Fluid Heat dealership, write: *Fluid Heat Division, ANCHOR POST PRODUCTS, INC., 6720 Eastern Ave., Baltimore 24, Md., or Coolbaugh St., Red Oak, Iowa.*

fluid heat
AUTOMATIC HEATING EQUIPMENT

"WORLD'S ECONOMY CHAMPION"

Division of **ANCHOR POST PRODUCTS, Inc.**
Sales Offices and Factories: Baltimore, Md. and Red Oak, Iowa

in the nine week course are forced air systems, gravity systems, floor and recessed wall heaters, and ventilating and air conditioning. The course in sales training is not being given in connection with the engineering school this year. It will be held instead during the months of September and October, and will call for separate enrollment.

Air conditioning has been the subject under discussion at the last several meetings of the institute. According to the various speakers and panels, less than 1 per cent of the market potential has been tapped in the air conditioning field, and its current series of talks was initiated in order to provide members with up to date information that will help prepare them to meet the growing demand for this type of service. Speaker at the February meeting was R. A. Halla, sales supervisor, York Corp., who is in charge of the company's franchised dealers and distributors in southern California, Arizona and Nevada. Mr. Halla talked on refrigerated air conditioning and its place with the heating contractor.

Cleveland Group Elects Officers

ELECTION OF OFFICERS was held by the Warm Air Furnace and Air Conditioning League, Inc. (Cleveland) at its recent annual meeting. Elected to serve as president for 1954 was J. D. Nugent. R. Howard is first vice president and E. Hann, second vice president. Michael J. Orobella was elected secretary; Wm. Roy Fleck, financial secretary; Robert Thompson, treasurer; and John W. Wolf, sergeant at arms. Directors are Paul Aenis, Ben J. Bauer, J. H. Bauman, M. P. Boxerbaum, John E. Donnelly, Wm. Fingerhut, Don Fisher, Dave Gore, Franklin T. Linx, Norbert Schill, S. B. Tamulewicz and M. Vitullo.

Atlanta Officers Elected

THE MASTER ROOFING and Sheet Metal Contractors Association of Atlanta recently elected Leroy Still president. W. A. Strickland is vice president and Wendell Townsend is secretary-treasurer.

Guests at the February dinner meeting of the Atlanta group were several members of the Roofing and Sheet Metal Contractors Association of Georgia, including I. C. Mock (president), Marvin Kelly, Jr., Bert Stewart and B. L. Noblitt. On the day following the meeting, the visitors, accompanied by members of the Atlanta association, called on a number of prospective members of the state association, and as a result, seven joined.

Record Warm Air Registration at Purdue

THE NEWS BULLETIN of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana reports that the warm air heating short course at Purdue University had a record registration despite unfavorable weather conditions. Students were enthusiastic in their comments on the value of the classes, according to the bulletin, and it was noted that many dealers have been regular attendants at the school since its inception five years ago.

Coming Events

May 16-20 — Oil Heat Exposition (The National Indoor Comfort Exposition) sponsored by Oil-Heat Institute, Commercial Museum, Philadelphia. See special Show Section in this issue for full details. R. H. L. Becker, Managing Director, 500 5th Ave., New York 36.

May 23-25 — National Heating Wholesalers Association, Inc., Spring Convention. New Ocean House, Swampscott, Mass. Stuart Rambo, Secretary, Suite 921 Builders Bldg., 228 N. LaSalle St., Chicago 1.

June 10-12 — Roofing and Sheet Metal Contractors Association of Georgia, Annual Convention. General Oglethorpe Hotel, Savannah, Ga. B. L. Noblitt, Secretary, P. O. Box 1196, Augusta.

June 17-20 — Carolinas Roofing and Sheet Metal Contractors Association, Annual Convention. Grove Park Inn, Asheville, N. C. W. H. Arthur, Jr., Chairman, 225 Patton, Asheville.

June 28-30 — American Society of Heating and Ventilating Engineers, Semi-Annual Meeting. New Ocean House, Swampscott, Mass. A. V. Hutchinson, Secretary, 62 Worth St., New York 13.

July 11-14 — American Society of Refrigerating Engineers, 41st Semi-Annual Meeting. Hotel Olympic, Seattle. M. C. Turpin, Secretary, 234 Fifth Ave., New York 1.

Jan. 24-28 — International Heating and Ventilating Exposition (The Air Conditioning Exposition). Commercial Museum, Philadelphia. Charles F. Roth, Manager, International Exposition Co., 480 Lexington Ave., New York 17.

The bulletin also reports that the state association's membership trophy was recently awarded to the Sheet Metal Contractors' Association of Evansville. Howard Lewis of the Evansville group says, "No other district has what it takes to win the trophy from Evansville."

Grand Rapids Discusses Bylaws

HERBERT F. STEIGMEYER, president, Grand Rapids Heating Association, recently appointed a special committee to formulate amendments to certain of the association's by-laws, the suggested amendments to be acted upon at an early regular membership meeting. One of the amendments suggested by the committee had reference to the appointment of a delegate to represent the Grand Rapids association at meetings of the state association. The committee estimates that the cost to the association would be between \$125 and \$150 per year to pay for the delegates travel expenses, etc.

Oh! WHERE . . . is my wandering ad tonight?

SEND THE RIGHT MESSAGE TO THE RIGHT PEOPLE

Paid subscriptions and renewals, as defined by A.B.C. standards, indicate an audience that has responded to a publication's editorial appeal. With the interests of readers thus identified, it becomes possible to reach specialized groups effectively with specialized advertising appeals.

A.B.C. REPORTS

ABC

A.B.C. REPORTS—FACTS AS THE BASIC MEASURE OF ADVERTISING VALUE



...is my wandering ad tonight?

THREE are two ways to buy advertising space. One is the guesswork-opinion method. The caption above is the mournful song of an advertiser who is still selecting media the way it was done before World War I, when there were no standards for the circulations of published media and when there was no accepted and approved method of auditing circulations. In those days, advertisers O.K.'d their proofs and sent out their advertising with a prayer that some of their sales messages would find their way to market.

The other way to buy space is the factual, know-what-you-get-for-your-money method. Today advertisers can start their investments on a basis of facts by selecting media with the help of the information in the reports issued by the AUDIT BUREAU OF CIRCULATIONS. This cooperative and nonprofit association of 3300 advertisers, advertising agencies and publishers, organized in 1914, has established standards that make it possible to evaluate the circulations of published media. The A.B.C. maintains a large staff of experienced and specially trained circulation auditors who make annual audits of the circulations of publisher members. A.B.C. reports give the facts thus obtained.

Here are some of the audited facts about business papers that A.B.C. reports tell the advertiser:

- how much paid circulation;
- how much unpaid;
- an occupational or business breakdown of subscribers;
- where they are located;
- how much subscribers pay;
- whether or not premiums are used;
- how many subscribers are in arrears;
- what percentage of subscriptions are renewed.

Those who buy advertising on the basis of this factual information, as given in A.B.C. reports, do not have to speculate about the distribution of their sales messages. They KNOW where and to whom their advertising goes. That is why this business paper is a member of the AUDIT BUREAU OF CIRCULATIONS. Ask for a copy of our A.B.C. report and then study it.

AMERICAN ARTISAN

SAVY FURNACE Manufacturer

...NOW

YOU CAN SELL YEAR-AROUND COMFORT

WINTER
Air Conditioning — **SUMMER**
Air Conditioning

YOUR HEATING UNIT **PLUS** *Tecumseh* HERMETIC

When designing your furnace to include summer cooling for a true year-around air conditioning system, consider the advantages of a completely sealed Tecumseh hermetic compressor. The 3 H.P. Tecumseh hermetically-sealed compressor is designed primarily for use in year-around systems. This compressor will help your engineers to design the most dependable and efficient year-around air conditioning unit at the lowest possible price.

Yes, these new Tecumseh hermetics are the only compressors in the refrigeration industry today that offer so much for so little. Over 14 million Tecumseh hermetics now in the field attest to the acceptance of the Tecumseh hermetic. That is why furnace manufacturers are specifying Tecumseh in their new cooling units. And that is why it will more than pay you to investigate Tecumseh right now by writing us for complete details.

Remember, you can't go wrong when you specify the best—Tecumseh.



TECUMSEH

TECUMSEH PRODUCTS
TECUMSEH, MICH *Company*

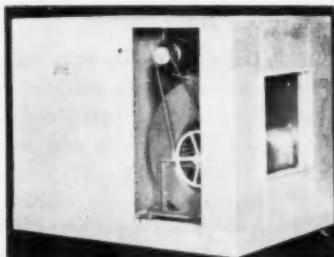
EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

EQUIPMENT DEVELOPMENTS

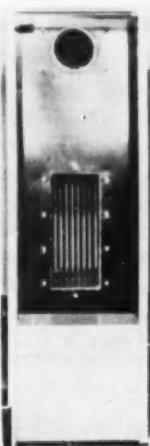
The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For new literature giving product information which is available, see page 187.

Furnace for New-Home Projects

"PROJECT" FURNACE designed to be low in cost, with savings effected by large volume installations in new-home projects — Airtemp Div., Chrysler Corp., 1600 Webster Ave., Dayton. The furnace is either oil or gas fired, is completely factory assembled and shipped with a ready-to-install gas or oil burner kit. The company has designed the furnace to meet the needs of the large number of homes scheduled for construction this year, which will use automatic winter air conditioning.



Above: Evaporative Cooler



Right: Furnace

Evaporative Air Cooler

"KOOL-TEMP" ROTARY spray type evaporative air coolers for commercial installations — Hayes Furnace Mfg. and Supply Co., 2929 S. Fairfax Ave., Los Angeles 16. Air entering the cooler intake is pulled through an atomized water spray where it is partially cooled and washed and then pulled through two sets of pads. The glass filter pads are mounted in the washer section in a vertical position, for continuous washing action. Pads are fire-proof and odorproof, are washed with a hose to remove impinged dirt. An all metal permanent panel type pad with zinc electroplated or copper coated wire mesh media mounted in zinc electroplated frames is optional equipment. The water distributing pump is a perforated slinger wheel direct-connected to a motor mounted in a waterproof compartment in the bottom pan of the washer chamber. All non-evaporated water drains back into the sump and is recirculated by the rotary slinger. Units are available in capacities ranging from 2500 to 12,000 cfm at $\frac{1}{4}$ in. static pressure.

Metering Adjustment for Fuel Unit

CALIBRATED METERING adjustment for an air-oil fuel unit — Fuel Unit Div., Sundstrand Machine Tool Co., 2531 11th St., Rockford, Ill. It is designed to provide built-in adjustability for the entire 0.4 to 1.5 gph firing range. To change the firing rate, a locknut is loosened, a screw driver is inserted in the slotted shaft, and the adjustment is made to the capacity desired. Adjustment may be made either with the unit operating or stopped. Completely contained in the end cap, the device requires very little servicing, the company states. The slotted shaft and cam are cast integrally so that there is only one rotating part. An O ring seals the shaft against leakage.



Above: Grinder



Right: Metering Adjustment for Fuel Unit

Heavy Duty Grinder

HEAVY DUTY grinder, in a 7 in. size, designed to perform almost all types of surfacing operations and to be used with abrasive discs or with a number of available accessories — Black & Decker Mfg. Co., Towson 4, Md. The motor on the redesigned model has 90 per cent more power, yet the new tool is lighter, weighing 14 lb, the company states. The grinder is available with no-load spindle speed of either 5200 or 6000 rpm. Lubricant sealed ball bearings are used throughout and heat treated spiral bevel gears are intended to provide an even flow of power. A replaceable steel wear ring protects the front of the main housing. The housing is so designed that air from the motor is deflected away from the operator. The switch is enclosed. The tool is designed to smooth welds and casting ridges, to cut off studs, bolts and rivets, etc. It carries an optional standard voltage of 115 or 220 volts.

Cooling Towers

PROPELLER-FAN type cooling towers for residential and commercial air conditioning applications — Bush Mfg. Co., 179 South St., West Hartford 10. Available in a

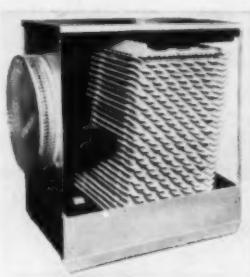
equipment developments

(Continued)

capacity range of 2 to 15 tons, they are constructed with a nail-less Redwood fill. Special weather-protective coatings are provided. Galvanneal panels are zinc chromate prime coated inside and out, then rubber undercoated inside and coated outside with a base paint of high chlorinated rubber content. Standard motors are 110 volt, single phase, 60 cycle. All motors are totally enclosed and have built-in overload protection. Motors, fans and drives are of sufficient capacity to handle average ductwork for indoor installation if desired. Distribution pan, top and fan guard are all removable for access to internal parts.



Above: Cooling Tower



Left: Space Heater

Gas Fired Warm Air Space Heaters

TWO NEW "Paraflo" gas fired warm air space heaters with capacities of 200,000 and 250,000 Btu per hr, designed for use with natural, manufactured or mixed gases and liquefied petroleum — Heating Dept., Machinery Div., Dravo Corp., 1203 Dravo Bldg., Pittsburgh 22. The self-contained gun type flange mounted gas burner incorporates a combustion air fan driven by a $\frac{1}{4}$ hp resilient mounted motor. It operates on 110 volt, 60 cycle, single phase power and is equipped with a thermoelectric safety pilot. The blower features a positive mechanical shut-off valve (operated by a centrifugal governor on the motor shaft), a pilot safety and an electrically ignited gas pilot. The air circulating fan is interlocked with the burner. Nozzles can be rotated 360 deg. The overhead discharge air will warm areas up to 90 ft from the unit without creating uncomfortable drafts, the company states.

Metal Strip or Sheet with Hammered Finish

PATTERN 1-HM "hand hammered" metal effect available in metal strip or sheet up to 38 in. wide — Rigidized Metals Corp., 699 Ohio St., Buffalo 3. The three-dimensional pattern is produced in quantity, has a maximum depth of 0.025 in. on metals up to 0.0312 in. thick. The non-directional, non-geometric pattern is easily matched in fabrication and installation, the company states. It is offered in stainless steel, copper, brass,

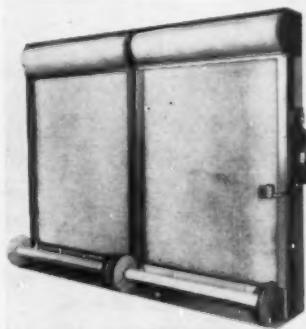
aluminum, and other metals. Finishes available are mill finish as rolled, mill finish with highlights, colorized and highlighted, painted or porcelain enameled without highlights. The reverse side of the sheet gives added effects. The pattern is intended to provide increased strength, lower weight and mar resistance as well as beauty.

Conversion Pump for Oil Burners

LOW PRESSURE conversion pump for oil burners, available in capacities of $\frac{1}{2}$ to 13 gal — Flame-Master Co., Inc., 3118 N. Milwaukee Ave., Chicago 18. The fuel meter has no pistons or wearing parts. In the fuel and air atomizing unit, fuel oil is supplied through inside tubing and air through outside tubing. Both meet at the nozzle, forming a fine spray. There is adjustable spacing between the air cone and the head and there is an extra-large nozzle opening. The unit is interchangeable with high pressure fuel units. It performs equally well when firing above 1 gph of oil and prevents plugged nozzles with the 0.50 to 1 gal fires, according to the manufacturer.

Automatic Self-Cleaning Air Filter

"ROLL-O-MATIC" automatic self-cleaning air filter, which uses a glass fiber filtering medium and is designed for use with commercial and industrial ventilating and air conditioning systems, to clean both outside and recirculated air — American Air Filter Co., Inc., 355 Central Ave., Louisville 8. The filter combines the operating and maintenance characteristics of dry type filters with the large dust holding capacity and high allowable operating resistance of viscous types, the company states. The continuous length fiber glass filtering medium is supplied in rolls of about 70 ft. Material from the roll, mounted

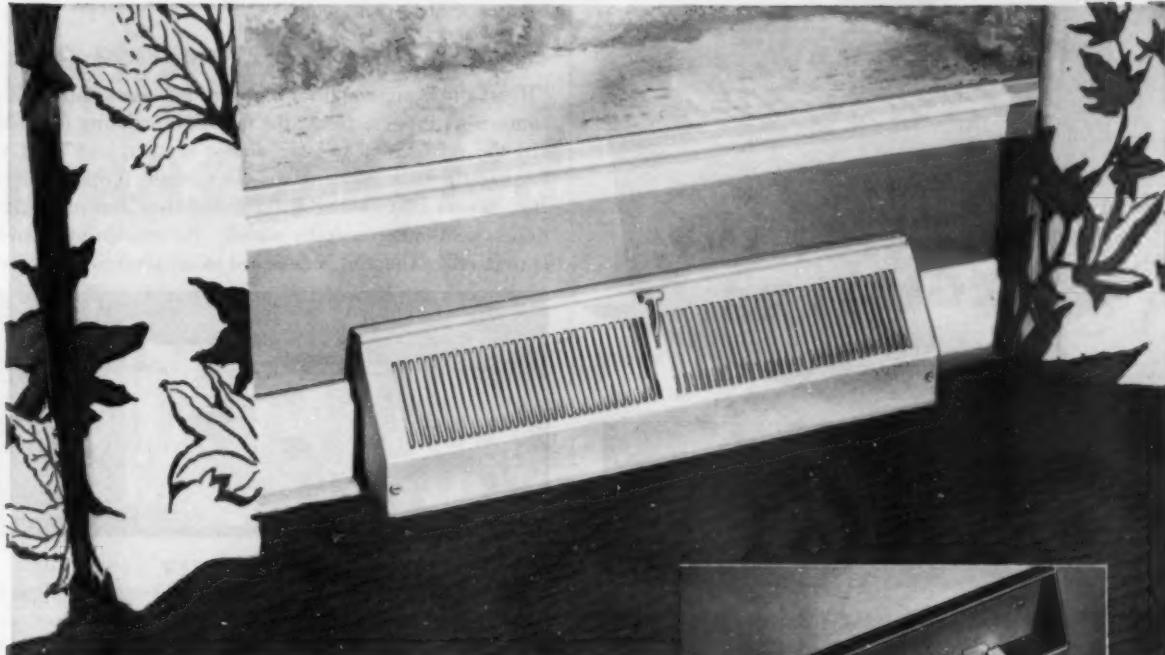


at the top filter casing, is transported on a continuous screen that rotates over top and bottom sprockets, down the face of the filter and is re-rolled at the bottom after collecting its dust load. A pressure switch sensitive to the resistance differential across the filter curtain actuates a drive motor that rotates the screen and feeds the clean medium into the filter curtain. The unit is made in vertical sections 3, 4 and 5 ft wide and 5 to 15 ft high.

Aluminum Building Letters

CAST ALUMINUM alloy "3-D" letters for mounting on buildings — Nelson-Harkins Industries, 5301 N. Kedzie Ave., Chicago. Letters are available in a large variety

NOW-AUER "Perfusaire" OFFERS A NEW LOW-COST APPROACH TO PERIMETER HEATING



Here is an attractive baseboard perimeter register only 18" wide and 4½" high—simple in design and easy to install—that has the capacity of 4 and 8 foot-long perimeter diffusers—at substantially lower cost! Built-in damper permits balancing of system without additional expense.

SCIENTIFICALLY DESIGNED FOR HEATING AND COOLING

Auer "Perfusaire" distributes air over a wide area. Its amazingly low resistance provides peak efficiency on standard air-conditioning units and reduces power consumption of blower motor. Its air pattern makes it perfectly adaptable to combination heating and cooling systems.

COMPARE FOR EASE OF INSTALLATION

"Perfusaire" can be installed easily on old or new jobs, outside the baseboard, against the plaster, or plastered in. Uneven walls, that make installation difficult for long diffusers, present no problem. You save time, too, because it has a pre-cut hole to fit the new 2¼" x 12" fittings, with knock-outs to make the opening 2¼" x 14" where needed. Attached clips firmly hold outlet to register.

Learn all about this amazing low-cost perimeter register.

THE AUER REGISTER CO.
6602 CLEMENT AVENUE • CLEVELAND 5, OHIO

Canadian Distributor
Marchand Furnace Ltd., Tilbury, Ont.

Fits 2¼" x 12" and
2¼" x 14" openings
without cutting. Clips fasten
duct outlet to register.



Scientifically engineered to provide air pattern shown in test photo—ideal for combination heating and cooling systems.

Attractive counter display available to promote your sales.

THE AUER REGISTER CO.

6602 CLEMENT AVENUE, CLEVELAND 5, OHIO

Send me descriptive bulletin on the Auer No. 100 "Perfusaire" Baseboard Perimeter Register.

Name _____

Company _____

Address _____

City and State _____



No. 321-A HMV Tandem

Each front grille bar may be adjusted individually. As a result, the angles of deflection or combinations of grille bar adjustment are unlimited. These adjustments may be made when register is installed or at any later time desired. The valves in Independent HMV registers are readily set by a lever control located on the front to direct the air up or down, or the valves may be fully closed. Available in a number of small and large sizes.



**Always Leading –
Always Progressing**



**THE INDEPENDENT
REGISTER CO.**

3747 E. 93rd STREET • CLEVELAND, OHIO

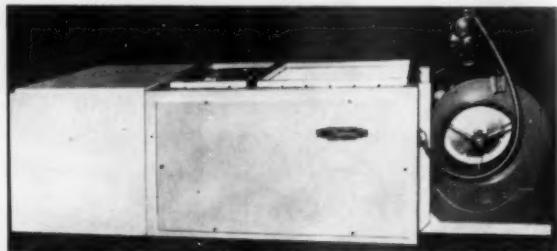
equipment developments

(Continued)

of stock patterns and range in size from 6 to 36 in. They can be mounted free standing, projected, or flush on the face of the buildings and can be illuminated directly or indirectly. They are furnished in bright polished aluminum or a variety of colors.

Conditioning Unit with Air Cooled Condenser

"HOMEAIRE" air conditioning unit for the small home, comprising three sections: the fan for circulating the cool air, the refrigerant and evaporator section, and the fan for handling the condenser cooling air — York-Shipley, Inc., Jessop Place and P.R.R., York, Pa. The refrigeration system is hermetically sealed. No condensing water is required. The unit is designed to air condition a space



up to 1000 sq ft, the size of the average six room home. It is 19 in. high, 25 in. deep and 69 in. long, is designed for installation in attics, basements, crawl spaces or closets. The unit is powered by a 1½ hp air cooled condensing unit using "Freon-12." Two units can be installed for zoned cooling where greater capacity is needed.

Self-Contained Window Conditioner

MODEL 150 WAC "VORNADO" 1½ hp self-contained window unit designed to cool an area of up to 1000 sq ft — O. A. Sutton Corp., 1812 W. 2nd St., Wichita 2. It is designed for office and commercial applications. Air is directed into the room at 1400 fpm through three air circulators which rotate 360 deg and tilt up or down. A push button control system is standard. The unit provides cooling, ventilating, re-circulation, exhausting and dehumidification. Exhaust and damper doors are controlled by electric solenoids. The unit can remove up to 13½ gal of water from the air in 24 hr. All air is filtered.

Arc Welding Holder

MODEL H12A lightweight, water cooled arc welding holder, for use in welding thin gages of aluminum, stainless steel, copper base alloys and magnesium — Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 60 E. 42nd St., New York 17. The insulation material is plastic designed to withstand rough treatment. The holder is lightweight and well balanced and the design is intended to facilitate manipulation in hard-to-reach corners. Features include interchangeable electrode caps 2, 3 and 7 in. long; an assortment of ceramic nozzles;

NEW compact, preassembled low-cost heating units with famous **CENTURY** quality

Forget about the problems you've had with economy-model automatic heating units. The frequent service calls, the customer complaints are headaches you can get rid of once and for all. For now, you can get compact, preassembled, low-cost Century automatic heating with no sacrifice in quality.

Deep "Crescent" radiator design with spiral gas travel

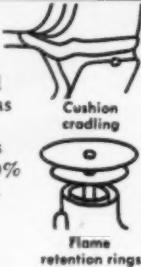
Hot gases from the combustion chamber are forced to travel longer distances before entering the flue. There are three heating surfaces. More heat heats the home. Less goes up the chimney.



Crescent design

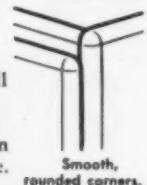
Quiet trouble-free operation

The new Century preassembled oil units are available with famous Century cushion cradled burner that absorbs vibration and noise. The gas models have trouble free single-port burners, with flame retention rings and flame spreaders for maximum heat utilization. For safety — 100% shut off including pilot. In every engineering detail, Century low-cost preassembled units are of highest quality.



Clean, modern, compact design

The cases are beautifully finished in baked enamel — with smooth rounded corners. Overall dimensions are such that you can easily get these units into any basement or tight spot in small homes. Flue opening and burner are on the same side...another space saving feature.



Smooth, rounded corners.

Many other features found only in high-priced units

Century preassembled basement units include full base with leveling adjustment. No part of the jacket is in contact with the floor. In all models, all line voltage wiring is included. There is adequate blower capacity in the units to handle appropriate size cooling units for summer air-conditioning.



Sturdy leveling bolts

All this in a low-cost preassembled unit.

For complete information on these high-quality, low-cost Century preassembled units write or phone Century Engineering, Cedar Rapids, Iowa. Or contact your Century wholesaler.

CENTURY ENGINEERING CORPORATION

Heating Division — Cedar Rapids, Iowa

Models Available: preassembled.

BG 110 L	gas loboy, 110,000 BTU input
BG 110 U	gas hiboy, 110,000 BTU input
BG 100 L	gas loboy, 100,000 BTU input
BG 100 U	gas hiboy, 100,000 BTU input
BO 100 L	oil loboy, 100,000 BTU output
BO 100 U	oil loboy, 100,000 BTU output
BO 85 L	oil loboy, 85,000 BTU output
BO 85 U	oil hiboy, 85,000 BTU output

easiest installation!
lowest operating cost!
highest cooling efficiency!

CHILL-AIR

EVAPORATIVE COOLERS for Home— Business— Industry



INDUSTRIAL AND COMMERCIAL COOLERS

Model No.	CFM	HP	Cu. Ft. of Space to be cooled
45P	4500	1/2	3,000-4,000
70P	6800	3/4	3,500-6,000
100P	9600	1	7,000-15,000
150P	15000	2	15,000-30,000

Above motors 110-220 v. single phase
(three-phase motors available on order)



CHILL-AIR MORE-VIEW

window coolers for home and offices are equipped with window adaptors and come ready for operation. No wiring or holes to cut. Just set in window, connect to waterline and plug into nearest outlet.

MORE-VIEW HOME AND OFFICE COOLERS

Model No.	CFM	HP	Speeds	H	Size W	D
32WP	3000	1/6	2	39	31	24
40WP	4000	1/3	1	39	33	28
42WP	4000	1/3	2	39	33	28

Above motors 110 v. single phase for plug-in to electric outlet

NATIONAL ENGINEERING & MFG. CO.
SEDLIA, MISSOURI

FREE
Engineering
Service

Write for
descriptive
literature

equipment developments

(Continued)

and four sizes of collets. Rated at 125 amp, the holder can be operated on a-c or d-c power; it measures 7½ in. in length; weighs 4 oz.



Pilot



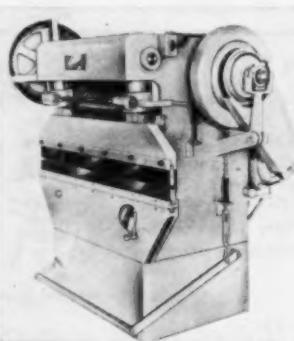
Arc Welding Holder

Pilot for Gas Appliances

No. 2B "TARGET" pilot for gas operated appliances, designed to eliminate the need for primary air intakes and to maintain a steady blue flame — Robertshaw Thermostat Div., Robertshaw-Fulton Controls Co., Youngwood, Pa. Fabricated from stainless steel, the pilot has been thoroughly tested and offers dependable operation, the company states.

Gas Fired Unit Heater

TWIN FAN gas fired unit heater with 250,000 Btu capacity — Reznor Mfg. Co., Mercer, Pa. The two fans, operating from a single heavy duty ¼ hp motor, move 3200 cfm with an air throw of 83 ft, the company states. The smaller fans are designed to provide effective air distribution at a low noise level. The cabinet is 36 in. wide and 24½ in. deep. The burner arrangement is from back to front and the access panel to the pilot and burners is across the back. A swing down panel provides access through the bottom of the heater.



Above: Unit Heater

Left: Bending Brake

Sheet Metal Bending Brake

"CONNECTICUT" IMPROVED sheet metal press brake — W. Whitney Stueck Inc., Old Saybrook, Conn. It is powered by a ¾ hp motor and is designed to bend 16 gage mild steel 4 ft wide over a ½ in. die opening, or 10 gage 2 ft wide over a 1⅓ in. die. The brake has a speed of 40 strokes per minute, with deflection minimized by specially designed support of the main crank

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OCTAGON RADIATOR!

The 8-sided
design that brings
PERFECT BEAUTY
to a radiant jewel—
also brings
PERFECT HEATING
to America's Most Efficient Furnaces

Find out today about the astounding performance records being established by the all-new Kalamazoo Line. Heating engineers can hardly believe their eyes when they see the facts. Write today for complete information about the furnace that is making heating history.

ALL MODELS! Lo-Boys! Counter-Flo's! Hi-Boys! Gravities!

OIL



GAS



ALAMAZOO

Since 1901—the finest in heating equipment

100 ROCHESTER AVENUE
KALAMAZOO, MICHIGAN

We use oil for fuel not for FILTERS...

• No messy oils or adhesives are needed with A-LUM-O-AIRE filters. The filter media of A-lum-o wool with its millions of tiny barbs does the job.



Highly magnified view of A-lum-o wool

A-LUM-O-AIRE

PERMANENT AIR FILTER

TRADEMARK REGISTERED

clean • safe • efficient

A-LUM-O-AIRE filters for air conditioning units are of all metal construction. They give permanent maximum efficiency, safety and cleanliness. They are built to last the life of the unit and are easily cleaned by flushing with cold water. The filter media of A-lum-o wool is processed by Carey Electronic Engineering Co. from an aluminum alloy made to their specifications. The filters are available to both industrial and domestic markets and in sizes to fit any type of air conditioning unit.

Manufacturers Agents, Sales Representatives, Air Conditioning service companies and established Distributors inquiries will be given prompt attention.

METAL WOOL DIVISION OF
CAREY ELECTRONIC ENG. CO.
SPRINGFIELD, OHIO

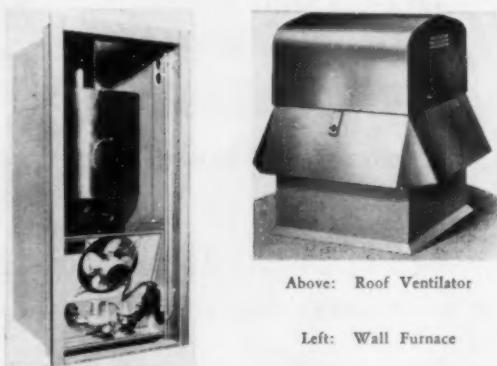
equipment developments

(Continued)

shaft at both ends, the company states. A reversing switch permits the ram to be backed off in case of jamming. A back gage, operated from the front, is built in as standard equipment. This is designed to permit accurate resetting and speeding up of production. The brake may also be adapted to multiple punching. There is 32 in. wide clearance between the side frames. Maximum die space is 7 in., stroke 2 in. and adjustment 1½ in., giving a shut height over a die block of 3½ in.

Power Roof Ventilator

"EJECTAIR" centrifugal backwardly curved blower type power roof ventilator — Hayes Furnace Mfg. & Supply Co., 2929 S. Fairfax Ave., Los Angeles 16. The blower wheel cannot be overloaded regardless of length of curves in duct or variation in design, the company states. It is belt driven and is mounted on a built-up curb on the roof. Features include a low profile, large volumes of air moved in relation to size of unit, grease packed ball bearings which are out of the air stream, and a weather-proof housing that is accessible for servicing and is corrosion resistant, according to the manufacturer. A manually operated safety cut-off switch is provided.



Above: Roof Ventilator

Left: Wall Furnace

Wall Furnace

MODEL C-75 "Mor-Sun" wall furnace designed to provide automatic warm air heat for small homes, apartment units and in space heating applications — Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7. Designed to be low in cost, it is available for gas or oil firing, measures 25 in. square by 52¾ in. high. A louvered grille covering the front conceals the entire unit, can be easily removed, the company states. The oil fired unit has an output capacity of 57,000 Btu per hr and features a 6 in. barometric draft regulator and an automatic thermostat as standard. Standard for the gas fired unit, which has an input of 75,000 Btu per hr, are a draft diverter and an automatic thermostat. Both furnaces have 10 in. propeller type circulating fans. They are AGA and UL approved.

Year 'Round Unit

YEAR 'ROUND home air conditioner designed to provide both cooling and heating in one unit (in addition to de-

Catch your eye?



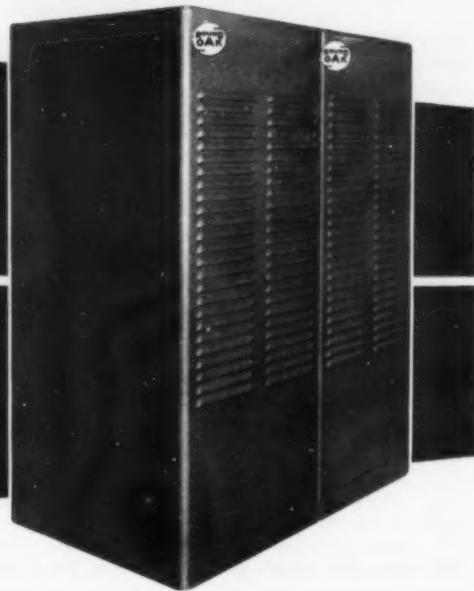
... wait 'til you see the New
Clima-Twins by ROUND OAK



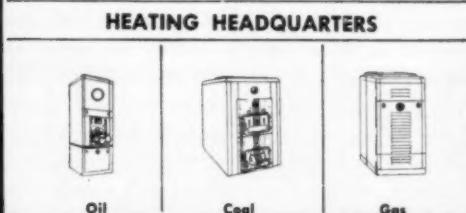
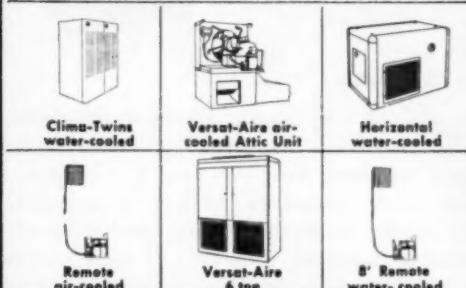
AUTOMATIC HEATING
IN WINTER . . .
OIL OR GAS



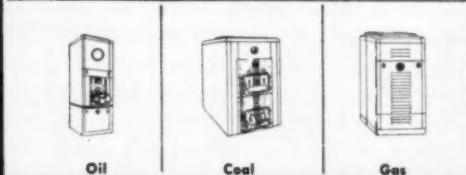
COOLING AND
DEHUMIDIFICATION
IN SUMMER



ROUND OAK YOUR AIR CONDITIONING HEADQUARTERS



HEATING HEADQUARTERS



The beautifully designed Clima-Twins are the answer to the industry's demand for compact year-round air conditioning. The all-important heating cycle provides the same dependable perfection traditional with all Round Oak heating equipment. When necessary to "step down," the heating unit may be installed and cooling unit added at a later time . . . one "upstairs" control for both.

Round Oak's new line is the *12-month answer* to your business problems . . . write today.

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Since 1871

ROUND OAK

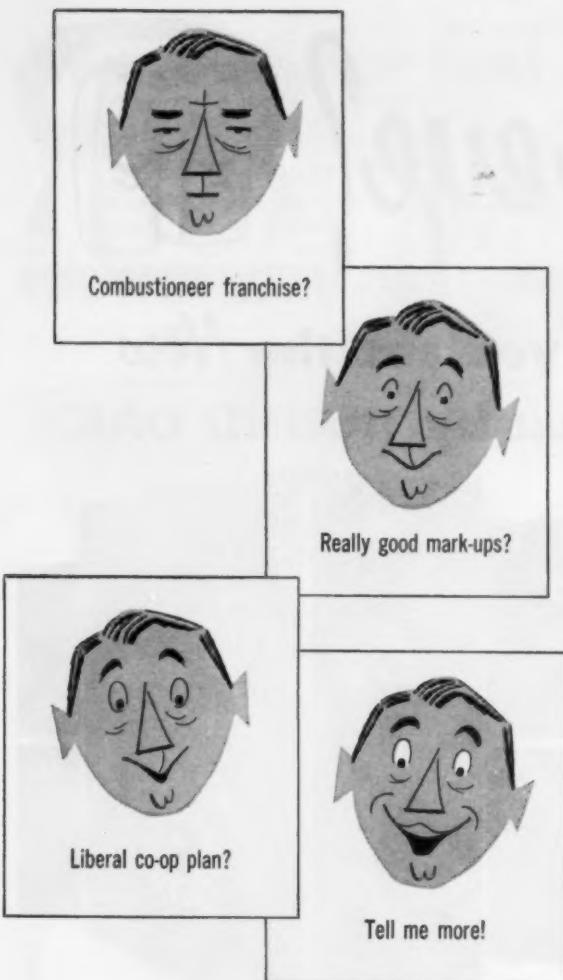
Round Oak Co., Inc.
Dowagiac, Michigan

Please rush me information on the new Round Oak line:

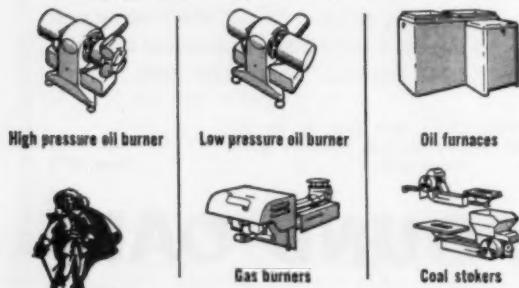
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We'll be glad to tell you more about the valuable **Combustioneer** franchise . . . about our complete line . . . about really good mark-ups to meet today's selling costs. You'll like the merchandising and promotion plans geared to your market! You'll admire the high quality, dependable products! Write or wire today for the complete story!



Combustioneer

The Steel Products Engineering Company
1345 West Columbia St., Springfield, Ohio



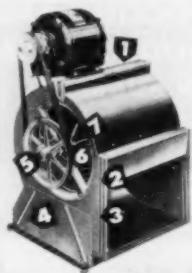
equipment developments

(Continued)

humidifying, filtering, ventilating and circulating air) — Worthington Corp., Harrison, N. J. A thermostat provides year 'round control. The unit can be installed in any type of house (and in any part of the house) and will fit through a standard 30 in. doorway, according to the manufacturer. The air conditioner will be offered in 2 and 3 hp sizes, with either a gas or oil fired furnace. The unit is thermally and acoustically insulated with aluminum-faced fiber glass. The compressor is a hermetically sealed unit designed to minimize vibration. The entire cooling section fits into the bottom of the cabinet and can slide in or out for easy access.

Forced Warm Air Furnaces

"Cozy" FORCED WARM air furnaces in six models: upflow and counterflow types in input ratings of 140,000, 105,000 and 75,000 Btu per hr — Advance Furnace Co., 2300 E. Douglas, Wichita 7. An "insulated" air wall surrounds the heat exchanger unit in these furnaces, keeping the furnace cabinet wall completely cool and allowing zero clearance installation without fire hazard, the company states. The "Curvic Heat Wringer," which removes heat from the burned gas, has four transfer surfaces. The units can be installed with conventional or 4 in. ducts. Direct or belt driven blowers are used.



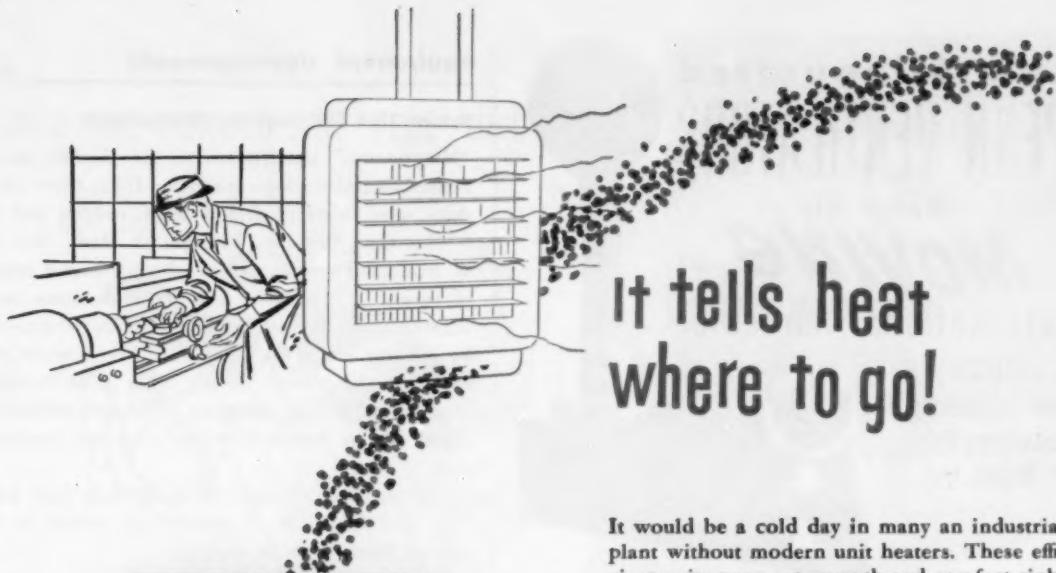
Above: Blower Assembly



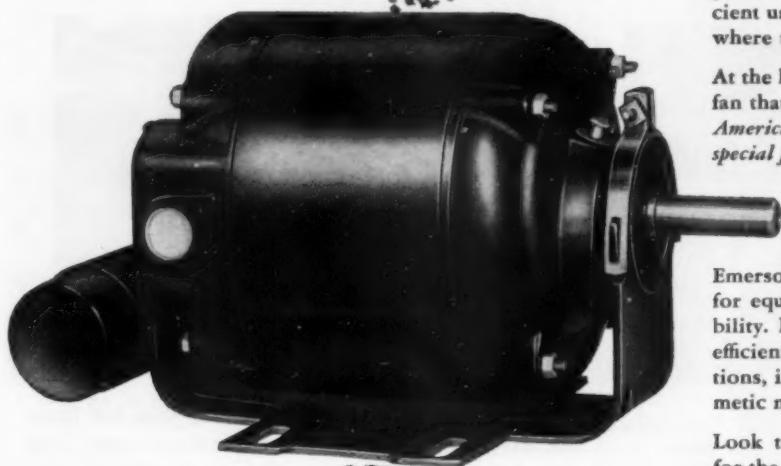
Right: Furnace

Blower Assembly

BLOWER assembly with "counter-vibration" improvements — Viking Air Conditioning Div., The National Radiator Co., 5601 Walworth Ave., Cleveland 2. Features (as numbered in the illustration) include 1) new factory-mounted bracket of double 16 gage steel designed for quick slide-on mounting of motor; 2) rigid triangular cut-off that ties into outlet sides for quietness, rigidity and accuracy of outlet; 3) ribbed true outlet with double ribs stamped in three sides to stiffen flat metal areas and make a better seal with the felt collar; 4) rigid feet with V. ribs and twin gussets to resist handling shocks and aid in line-up of mounting holes; 5) spring and cushion shaft mount; 6) self-aligning bearings, 360 deg adjustable, designed to hold a year's supply of oil; and 7) balanced blower wheel.



It tells heat where to go!



It would be a cold day in many an industrial plant without modern unit heaters. These efficient units pour out warmth and comfort right where they are needed.

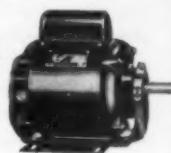
At the heart of each unit is a quiet, dependable fan that sends the heat on its way. On many of America's best known unit heaters Emerson-Electric special fan-duty motors power the fans.

Emerson-Electric specializes in building motors for equipment with a reputation for dependability. It has done so for 63 years, and offers efficient motors for a wide variety of applications, in ratings from $1/20$ to 5 h.p., and hermetic motors $1/8$ to 20 h.p.

Look to Emerson-Electric if you are looking for the right motor to power your product efficiently, dependably. Your inquiry is invited.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

**EMERSON-ELECTRIC
MOTORS**
**For Belted Fans
and Blowers**



These motors incorporate all the electrical and mechanical specifications best suited for this service. Split-phase motors, available in $1/6$, $1/4$ and $1/3$ h.p., with resilient mountings and automatic reset thermal protectors. For complete data write for Motor Bulletin No. M403.

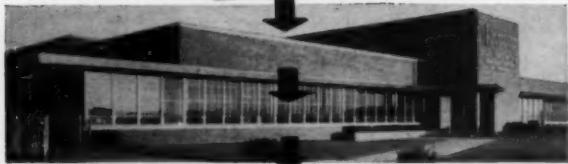
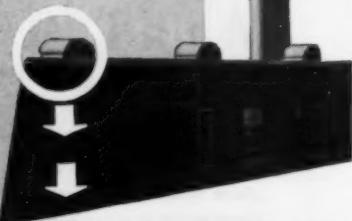
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MOTORS • FANS *EMERSON*
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Low Silhouetted PENN VENTILATORS

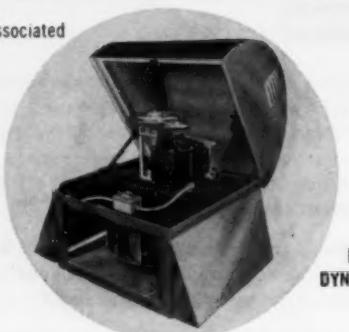
Keep Air

MOVING at

International Harvester
Company's
new Engineering &
Laboratory Bldg.,
Ft. Wayne, Ind.



Designed by:
Albert Kahn Associated
Architects &
Engineers



- Twenty-nine Penn Dynafans serve the new International Harvester Company's office and laboratory facilities at Fort Wayne, Indiana. Inconspicuous and easy to maintain, these units are depended upon to move air quietly. Many plant ventilation problems are easily and inexpensively solved by these versatile units. Count on the Penn Ventilator man in your area for qualified and complete assistance on your next ventilation problem.

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Available...
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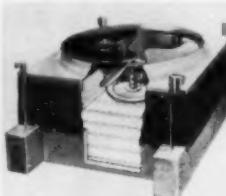
equipment developments

(Continued)

Room-Size Electrostatic Precipitator

"MICRONAIRE" ELECTROSTATIC air cleaner designed to screen out microscopic particles from room air, aiding those who suffer from hay fever, asthma and allergies — Raytheon Mfg. Co., Waltham 54, Mass. It is designed to strain out smoke, pollen, dust, lint and many types of germs. The cleaner uses about the same amount of current as a 40 watt light bulb. Air is drawn into it by a motor-driven fan and passed over a series of closely spaced metal plates. Every other plate is electrically charged and acts as a magnet. The unit containing these plates can be removed in one piece and washed in the sink.

The air cleaner weighs 60 lb, is 30 in. high and 15 in. wide and deep. It is mounted on casters to facilitate moving from room to room.



Above: Attic fan



Right: Precipitator

Attic Fan Package Unit

MODEL HV attic fan which utilizes the same fan frame for either vertical or horizontal installation and is designed to maintain the same efficiency in either position — Chelsea Fan & Blower Co., Inc., 639 South Ave., Plainfield, N. J. It is available as a complete packaged unit which includes the fan, an accessory set and the ceiling shutter or an outside louver. Spring mounting and a canvas boot, connecting fan frame to ceiling or wall, will absorb whatever vibration is set up by the fan, the company states. The propeller shaft is supported by a bronze bearing and the fan frame features a venturi orifice.

Units are available in propeller diameters from 24 to 48 in., with certified air ratings of from 5100 to 17,500 cfm.

Skipper Time Switch for Room Air Conditioners

SERIES P690 "INTER-MATIC" portable, plug-in time switches designed for automatic control of room air conditioners — International Register Co., 2624 W. Washington Blvd., Chicago 12. They are for use with any 1/3, 1/2, 3/4 or 1 hp room air conditioner and are equipped with a 4 ft, 14 gage three wire type "S" cord set with a moulded rubber, grounded male plug. One model is for 125 volt operation and for two or three wire electrical systems. Another is for 250 volt operation

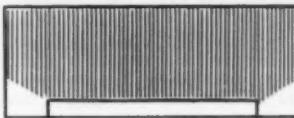
TAKE THE FORCED AIR 'FEEL' OUT OF THE FORCED AIR SYSTEM!



YOU CAN GET
ENOUGH AIR
THROUGH A
HOLE IN THE
FLOOR! . . .

BUT IT TAKES *Thermo-Base*
TO PROPERLY DIFFUSE IT FOR
gentle WARMTH AND COOLING

DON'T BE MISLED . . . all baseboard diffusers are not alike!



Some units are too small . . . some have uneven distribution

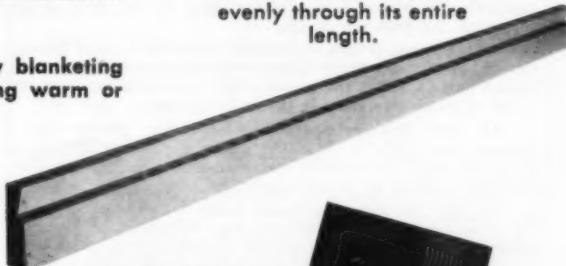
Thermo-Base distributes air evenly through its entire length.

Thermo-Base assures better results by completely blanketing outside wall or window surfaces . . . distributing warm or cool air evenly throughout its entire length.

8, 5, AND 3 FOOT LENGTHS give a complete range of units for easier, quicker installation. When necessary, they can be easily combined to give continuous coverage.
EASY TO INSTALL — It takes only a few minutes to install each Thermo-Base unit in either new or old construction. NO roughing-in necessary.

NEW LOWER PRICE — Thermo-Base costs a buck a foot or less — for the same high quality and proven performance that has made it America's fastest-selling warm air baseboard.

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SEND TODAY!
for the new comprehensive
12 page catalog.



THERMO-BASE DIVISION, GERWIN INDUSTRIES, INC.
Michigan City, Indiana

New 250,000 BTU Model

gives Reznor dealers the most complete gas unit heater line

Now, more than ever before, you need to sell Reznor to get your full share of the gas unit heater business. Reznor is already the world's largest-selling gas unit heater. The addition to the line of the new 250,000 BTU model will increase the lead.

Model US250-F is more than just another unit heater. It's the first unit of its size offered by any nationally recognized unit heater manufacturer. And it's the first of any size with the twin-fan design.

Why two small fans (operating from one motor) instead of one large fan? More effective air distribution at a much lower noise level is the answer. The new unit moves 3,200 CFM with an effective air throw of 83 feet.

All that heating capacity and all that power—in a cabinet just $33\frac{1}{2}'' \times 36'' \times 24\frac{1}{8}''$. It's the ideal answer to a lot of tough commercial and industrial heating problems. You can't afford to be without it.

See your Reznor distributor today for details, or write for your copies of specification sheet NPS-5401 on the new model and catalog GN-52 on the complete line.

The Reznor Manufacturing Company
53 Union Street, Mercer, Pa.



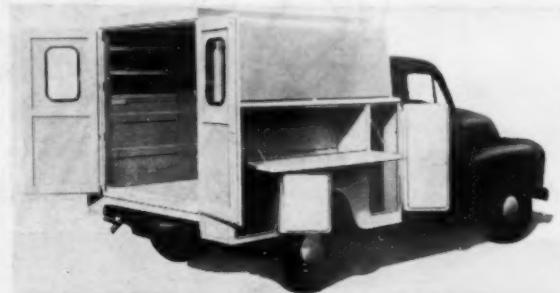
equipment developments

(Continued)

on a three wire system. The "skipping" device permits the user to skip the automatic operation of the time switch on any selected days of the week. Up to 11 on-off operations are possible per day, and timing range is one to 23 hr (UL approved).

Service Structure for Truck

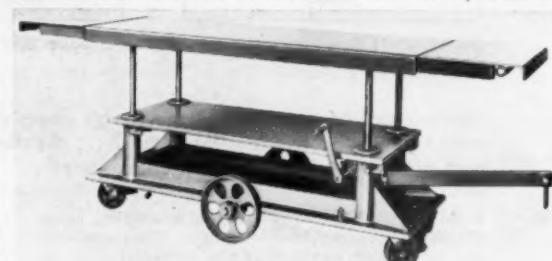
UPPER structure which can be added to the bodies of "Carry-All" trucks to create a totally enclosed service unit — Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7. It provides a protected, covered working



area with six extra inside shelves running the length of the structure, extra carrying space, full height lockable rear doors and safe driving vision through the rear cab and rear door windows. It is available for $\frac{1}{2}$, $\frac{3}{4}$ and 1 ton chassis and can be purchased with a new body or added to older trucks.

Sheet Metal Handler

"PORTELVATOR" MACHINE for handling metal sheets from storage and during and between fabricating operations — The Hamilton Tool Co., 9th St. at Hanover, Hamilton, Ohio. The top table surface, which has a 14 in. adjustment between 24 and 38 in. above floor level, is 26 in.



wide and 72 in. long. Drop leaves are provided which increase table length to a 108 in. maximum. Capacity of the table is 5000 lb, and this weight is moved from low to high position by a worm gear and screw arrangement, the screw being actuated by a hand crank located on the side of the table. There is four point support of the load.

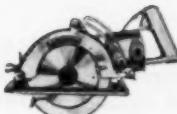
Horizontal Gas Fired Furnace

"TUCK-AWAY" horizontal gas fired furnace in input capacities of 60,000, 80,000, 100,000, 120,000 and

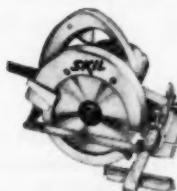
ON EVERYDAY SAWING...OR ON CUTTING
TOUGH METALS, PLASTICS OR COMPOSITIONS

"SKIL has the answer" TO ALL SAWING PROBLEMS!

with a specialized
model and blade or disc
for every job!



9 Extra-Heavy Duty SKIL Saws with high-torque worm drive. The favorite type for over 25 years on heavy ripping, tough metal and compositions that no other saw can handle. Here is your assurance of absolutely minimum maintenance in heaviest service. Blade diameters from 6" to 12".



3 Heavy Duty SKIL Builders Saws with high blade speed. Low in cost, light weight and easy handling, the new SKIL Builders Saws are ideal for quick cut-off work—for use with abrasive cut-off wheels. Many features found only in far costlier saws. Blade diameters: 6", 7½", 8¼".



98 Specially Designed SKIL Blades and Abrasive Cut-off Wheels carried in stock by SKIL Branches and distributors. With the proper SKIL Saw, you can efficiently cut any material encountered in the metal working field with substantial savings in time and money!

Saw, you can efficiently cut any material encountered in the metal working field with substantial savings in time and money!

Two New SKIL 6" Bench Grinders save steps . . . speed production



Carrying tools or work to distant bench grinders is a "bottleneck" you can break by spotting several of the new 6" SKIL Bench Grinders in strategic locations. Features: safety indicator light; removable wheel guards, covers; adjustable spark arrestors, tool rests; built-in dust exhaust chutes.

SKIL
PORTABLE TOOLS

Made only by SKIL Corporation, formerly SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Illinois - 3601 Dundas Street West, Toronto 9, Ontario
Factory Branches in All Leading Cities



FREE! New SKIL Blade Selector to help you solve cutting problems. Shows the blade and SKIL Saw to cut practically every material used in production and plant maintenance. Ask your SKIL distributor or send coupon.

FREE! Test Cutting Service on your problem materials. Send us samples of materials and details of any cutting problems in your plant. We'll let you know the SKIL Saw and blade to answer your problem.



FREE! Ask for a Demonstration and a FREE Trial of the SKIL Saw with the exact SKIL BLADE or CUT-OFF wheel to solve your toughest cutting problem.

SKIL Corporation, Dept. AA-54
5033 Elston Avenue, Chicago 30, Illinois

I would like a SKIL Blade Selector
 I would like a demonstration and free trial
 Please send literature on SKIL tools

Name _____
Company _____
Street _____
City _____ Zone _____ State _____

Use quickdraft

THE DRAFT CREATOR
that makes all chimneys friendly

ON MODERNIZATION AND NEW CONSTRUCTION

for bigger profits...
warmer friends

Now you can assure your customers against trouble with condensation on gas-fired heating plants—puffing, sooting and pulsating on oil burning equipment—smoking, puffing and clogging on coal furnaces—common difficulties caused by faulty or inadequate draft.

Short chimneys used in today's one-story and basementless homes do not provide sufficient draft to support full combustion and carry off all troublesome combustion products. Popular outside chimneys require longer to heat up and establish necessary draft. Long runs and elbows in smoke pipes and angles in chimneys cut down draft.

quickdraft overcomes these faults immediately and effectively. It creates full draft when firing begins and drives combustion products up the chimney. It operates through the firing period but does not "build up" excessive draft. **quickdraft** places no obstructions in the smoke pipe.

Simple, fool-proof, built for long service, **quickdraft** is reasonably priced . . . consumes no more current than a lamp bulb . . . and **quickdraft** is as easy to install as a length of smoke pipe which it replaces.

To make bigger profits and warmer friends, use **quickdraft** to prevent draft trouble on new construction, and to correct draft trouble on modernization work.

IMMEDIATE DELIVERY
all standard sizes

Write or
wire for
Installation
Manual
and details.

Patent
Pending

quickdraft
COMPANY

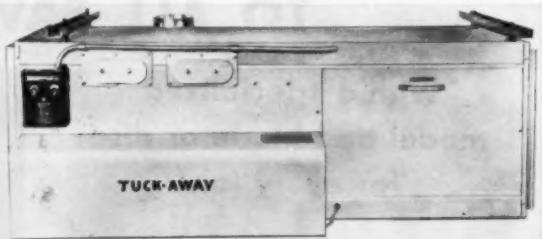
DIVISION OF THE HALL'S SAFE COMPANY, INC.

1150-D South Erie Blvd., Hamilton, Ohio

equipment developments

(Continued)

140,000 Btu per hr — Perfection Stove Co., 7609 Platt Ave., Cleveland 4. It may be installed in an attic space, under the floor, in a regulation basement, or suspended from the ceiling of a utility room. The furnaces are adaptable to almost any application where space is at a premium, the company states. They are delivered



as package units, shipped completely assembled with controls, including thermostat and thermostat wire. Controls are fully enclosed and may be mounted on either side of the cabinet. There are dual flue outlets. The multi-blade centrifugal type blower is mounted on rubber. Hanger brackets may be removed and placed on the bottom of the unit for base setting. Units are AGA approved.

Pneumatically Operated Throatless Shear

PNEUMATICALLY OPERATED throatless shear which operates on shop air pressure (60 to 100 psi), is designed to make any cut — straight, curved or irregular, and has a capacity of 3/16 in. in mild steel and 10 gage in stainless — Beverly Shear Mfg. Co., 3009 W. 111th St., Chicago. Air operation of the shear permits fast,



accurate cutting of any shape in metal to the capacity of the shear, the company states. A double acting trunnion mounted cylinder has its piston rod directly connected to the upper blade actuation arm for straight line power strokes. Length and speed of stroke may be adjusted by positioning the movable switch contact arms.

Larger Valve Orifice for Humidifier

LARGER VALVE orifice area in the Model 2300 humidifier, designed to keep the inlet free flowing longer and to facilitate cleaning — Viking Air Conditioning Div., The National Radiator Co., 5601 Walworth Ave., Cleveland 2. With the orifice diameter enlarged from 0.032 to 0.040 in., the flow of water through the opening is in-

put these All-Star Windmaster[®] features to work

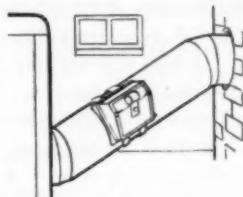
By taking advantage of these Windmaster features you help assure peak operating efficiency for the modern oil-burning equipment you install. At the same time, you make the job of installation easier and quicker . . . and reduce complaints and service call-backs.

Stop in at your jobber's and pick up a Windmaster Draft Control for your next heating job. Or, write for literature and prices.

Calibrated Weight gives quick, accurate draft adjustment right on the job with no factory setting to take for granted. Makes use of draft gauge easier by eliminating guesswork.



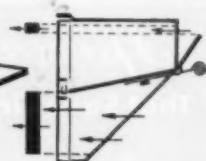
E-Z 'Dapter Simplifies Installation. Optional accessory, blanked and flanged to guarantee full size pipe opening. Only tool needed is a screwdriver to tighten control bands around it. Each size fits two pipe sizes.



Sloping Pipe Mounting is made possible by the thrust bearing effect of the nylon bearings. Can be mounted on sloping, horizontal or vertical pipe without leveling across bearings.

Permanent, Positive Stops. Projections on nylon bearings stop vane at end of upward swing, tie-bar across bearings stop vane at end of downward travel. Stops can't get bent nor vane go too far.

Fewer Sizes Needed. Only three control sizes will fit six different pipe diameters, providing complete flexibility with few sizes for residential jobs.



Angle mounted square vane provides more free area . . . assures quicker relief right when it is needed without that quivering first 45° of movement.



DuPont Molded Nylon Bearings can't rust or corrode . . . never need oiling . . . will outwear steel . . . and are permanently silent.

Windmaster
Corporation

Post Office Box 776 • Columbus 16, Ohio

Windmaster
Draft Control

Attractive, Rugged HARDWARE by NATIONAL LOCK

FOR HEATING AND AIR
CONDITIONING EQUIPMENT



(LEFT)
61-207 HANDLE



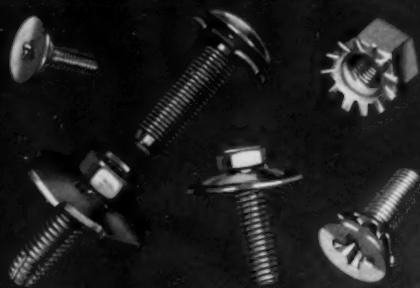
(RIGHT)
61-366 HANDLE

Latch spindle regularly supplied 1½" long. Can be supplied in ½ to 3" lengths in ¼" variations. Escutcheon is pierced for No. 6.

Round Head Screws on 1½" centers. Finished in Bright Zinc or Bright Chrome . . . other finishes on special order. Look to NATIONAL LOCK for hinges, catches, strikes and screws, too.

Special Fasteners

That Save Time, Labor, Materials



In addition to providing all types of standard fasteners, NATIONAL LOCK designs and makes special-purpose fasteners for specific jobs. Let our skilled sales engineers recommend fasteners that will effect important savings in your production.

If you are an original equipment manufacturer or jobber, write us. If you are a dealer, see your jobber.

NATIONAL LOCK . . .

market basket for industry
SCREWS • BOLTS • HANDLES
PULLS • CATCHES • HINGES



NATIONAL LOCK COMPANY
ROCKFORD, ILLINOIS



equipment developments

(Continued)

creased 35 per cent, to 13 gph under 40 lb pressure, the company states.

Calibrated Barometric Draft Control

MODEL R-C calibrated barometric draft control with a reversible wing-flap gate that adapts the control to the differing needs of vertical, as against horizontal, flues — Field Control Div., H. D. Conkey & Co., Drawer 11, Mendota, Ill. It is available in 7 and 9 in. sizes, the smaller size for a 6, 7 or 8 in. flue; the larger, for an 8, 9 or 10 in. flue. Because the collar is round, the off-size installations can be made without air leakage and without distortion of the flue pipe, the company states. The collar also allows for rotation of the control ring and gate to permit a level installation in a sloping flue, which is intended to assure that the gate always can function properly. The 9 in. control has a ring opening of 61.8 sq in., compared to 63.6 sq in. for a 9 in. flue.



Above: Mallet
Right: Draft Control



Soft Faced Mallets

"NUPLA" SOFT FACED mallets, in four sizes and four different hardnesses, for use where "soft" pounding is needed — New Plastic Corp., 1026 N. Sycamore, Los Angeles. Heads are made entirely of "Nuplaflex," a plastic that has the property of recovering its shape when dented by hard blows. It also will not chip, flake or mushroom, according to the manufacturer. The mallets are also designed to reduce to a minimum sting, rebound and shock. Since there is no sparking, they may be used near inflammables or explosives. A new head design eliminates projection of the handle through the head, making all surfaces usable.

Filter Effectiveness Indicator

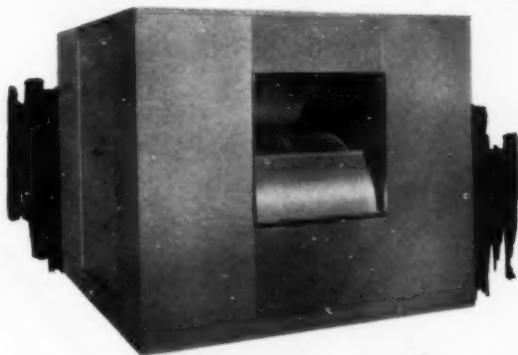
INSTRUMENT DESIGNED to show the relative condition of air filtering equipment in operation — Rex Laboratories Div., Rex Metal-Craft, Inc., 1717 Gent, Indianapolis. The scale is calibrated to show the full flow of air with a new filter installed. As dust accumulates, static pressure is reduced. With a drop of 0.03 in. water pressure, the indicator shows "Dusty"; with another 0.03 in. drop, the indicator shows "Dirty." Further accumulation reduces static pressure to between 0.10 and 0.12 in., at which time the indicator shows filters are to be replaced.

Alen EVAPORATIVE COOLERS

"Engineered for the task of giving cooling comfort"

BEST in VALUES

LOW initial cost . . . **LOW** installation and maintenance costs



SPRAY-WHEEL TYPE

Air-Washer

offers exact guaranteed
cooling efficiency

In all standard blower capacities

SPECIAL FEATURES:

- Flinger wheel does proper job of water atomizing
- Z-pad engineering design means cooler, filtered air always
- Pads rest on drain shelf which prevents return of water to lower pads (gives correct moisture content to entire pad area)
- Blower standard-frame motor equipped with variable-pitch pulley

For complete details on Alen Evaporative
coolers call or write

DRIP-PAD TYPE

Evaporative Coolers

—available in all standard blower
capacities to meet every
cooling requirement

SCIENTIFICALLY DESIGNED for longer life and to give ample
capacity for any requirement.



Evaporative Cooler Cabinets: of hot-dipped galvanized sheet metal

INTERIORS: entirely treated with etching type Zinc Chromate primer plus two applications of black, water-proof, rust-resistant coatings baked-on. Areas constantly subjected to moisture specially treated for long life. Interior working parts treated with new, longer-life, rust and corrosion-resistant, dipped and baked coating (found only in Alen coolers).



Alen PRODUCTS

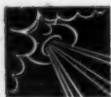
DALLAS, TEXAS

MFG. BY
(Comfort Products Corp.)

2220 S. Lamesa



keep the weather outdoors... where it belongs!



recommend and use
FOLLANSBEE TERNE METAL
for weatherproofing

Every house needs weathersealing, and every flashing, coping, valley or gutter is another opportunity for you to make a larger profit by installing Follansbee Seamless Terne Metal.

Weathersealing with Follansbee Terne is easy. Its ductility makes it easy to shape and bend. Tin-lead coating makes it easier to solder . . . can never flake or peel. Terne is the ideal weathersealing material for built-up, composition, wood, asphalt or asbestos shingle, slate or tile roofs.

Leading distributors are prepared to supply you with this high quality Terne Metal in 40 lb., 20 lb., and 8 lb. coatings, in various widths from 4 inches to 28 inches, in 50 foot continuous rolls. Be sure to specify Follansbee Terne Metal the next time you need "Valley Tin" or "Roofing Tin" . . . the most economical weathersealing available because of the savings in installation time and labor.

FOLLANSBEE STEEL CORPORATION GENERAL OFFICES, PITTSBURGH 30, PA.

Polished Blue Sheets and Coils

Seamless Terne Roll Roofing

Cold Rolled Strip



Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee. Sales Agents—Chicago, Indianapolis, Kansas City, Nashville, Los Angeles, San Francisco, Seattle, Toronto and Montreal, Canada. Plants—Follansbee, West Virginia

FOLLANSBEE METAL WAREHOUSES
Pittsburgh, Pa. Rochester, N.Y. Fairfield, Conn.

equipment developments

(Continued)

The instrument comprises a lightweight vane suspended on an aluminum bronze shaft, working in a glass bearing, providing extreme sensitivity, according to the company. The vane is mounted at the center of the wind tunnel and a tube extending from the latter to the pressure side of heating or cooling equipment is integral with the indicator.

Summer Air Conditioning Units

NEW 2 TON air conditioner which is a matching unit for the Model 22 furnace, and 3 ton air conditioner for the Model 26 furnace, to form year 'round installations in either upflow or counterflow designs — The Majestic Co., Inc., 733 Erie St., Huntington, Ind. The units are designed to provide completely automatic control of temperature and are intended for most small and moderate sized homes. In the counterflow unit, the furnace dis-



charges warm air down into the plenum during the winter. Backdraft louvers under the air conditioner close automatically while the furnace is operating. In summer, the air conditioner blower takes over, using the same ductwork, and the furnace louvers close. The upflow model operates in the same way except that the plenum is across the top. Units operate on either gas or oil, may be installed as a twin unit or the cooling unit may be added to existing warm air heating systems.

Oil Tank Sealer

"OYLITITE-STIK" for quick emergency sealing of oil leaks, cracks, pinholes or other flaws or rusty parts in welds or fuel oil containers, oil storage tanks, oil filled transformers, etc. — The Lake Chemical Co., 3052 W. Carroll Ave., Chicago 12. The compound is pressed into the splits, and will hold lubricating oils, fuel oils, etc.

Oil Fired Lowboy Furnaces

NEW ASSEMBLED "Economy" oil fired lowboy furnaces with 84,000, 96,000 and 112,000 Btu outputs — International Heater Co., 101 Park Ave., Utica 2. They are completely assembled, have a steel pan bottom (no grouting required) and a heavy gage cabinet. Units

A cordial invitation is extended to visit our booth No. 969 at the National Indoor Comfort Exposition, May 16-20; Philadelphia, Pa.

Oil Burner Accessories

OIL BURNER NOZZLES

with Mirror Finish Tip

individually flow tested for volume, spray angle and pattern.

DRAFT REGULATORS

with original and exclusive features

- Accurate Calibrated Adjustment
- True Balance
- Sensitivity & Bearing Surfaces
- True Alignment



NOZZLE KITS 2 MODELS

K-1 holds 30
M-1 holds 64



TELESCOPING FLAME INSPECTION MIRRORS

Telescoping adjustable handle—instantly extended and locked to desired length.

Interchangeable (round or rectangular)



2475

SOLD ONLY THROUGH JOBBERS AND MANUFACTURERS
Write for complete information

WM. STEINEN MFG. CO.

ESTABLISHED 1907

43 Broad Street Newark 5, N. J.

Sales Representatives or Jobbers in all principal areas in the United States, Canada and Europe

Heating Contractors!

Don't sweat out this Summer!

Get your share of the summer air conditioning profits by adding Alton "Air Washer type" evaporative coolers to your line. Alton coolers are designed especially for business and commercial places such as stores, cafes, churches, factories, taverns, theaters, etc.

Alton coolers are the only coolers to offer *all* of these outstanding features, at lowest price in the field.



1. **Aquasprao unit** thoroughly wets *all* mat area with a fine, even spray.
2. **Aquasprao unit** uses the same water over and over again. No costly water bills!
3. **Two separate mats** prevent water "pull-through" into the blower chamber.
4. **Squirrel-cage blower** delivers maximum quantities of cool, fresh air at low power cost!
5. **All-galvanized steel cabinet** lasts longer, gives more years of trouble-free service.
6. **No installation worries**, all-weather construction allows installation *anywhere* outside.

Get on the Alton Profit Train—

..... write today

Alton Mfg. Co., 1112 Ross Ave., Dallas, Texas
Please send me information about

An Alton dealership Alton Low-cost coolers

Name

Company

Address

City State

equipment developments

(Continued)

are convertible to gas. Two of the models are available with or without vestibule.

Vent Caps, Fill Boxes and Fill Caps

NEW CAST IRON slip-on vent cap (left), cast iron fill cap (center) and an aluminum hinge type fill box (right) in a new size — Oil Equipment Mfg. Corp., 169 Derby Ave., New Haven. The vent cap is available in $\frac{3}{4}$, 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ in. sizes and fits flush to the wall. It is designed to eliminate threading of the vent pipe; the set screw holds the cap in place. The fill cap is



Vent Cap

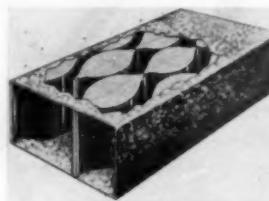
Fill Cap

Fill Box

available in $1\frac{1}{2}$ and 2 in. sizes and requires no gaskets or washers. It uses any standard fill box key, is designed especially for basement storage tanks. The fill box is now available in the new $1\frac{1}{2}$ in. size as well as the 2 in. size. It is heavy duty casting, and cap overlap is designed to keep dirt, etc., from entering.

Device for Quieting Fan, Air Noise

"AIRCOUSTAT" device for quieting noise caused by fans or by air movement in air conditioning systems — Industrial Sound Control, Inc., 45 Granby St., Hartford, Conn. The device is installed directly into the ductwork by means of flexible connections and can be located



either between the fan and room or above individual diffusers. It is constructed of galvanized steel or aluminum and fits ductwork of any design. Available in 11 standard sizes and in three types to meet various conditions, the device permits silencing of very low frequency noise, the company states.

Thermostat for "Problem" Atmospheres

A NEW heavy duty thermostat designed for accurate control of temperatures in areas where dust, corrosion and humidity are a problem — Minneapolis-Honeywell Regulator Co., 2726 4th Ave. S., Minneapolis. Designed to control gas, oil or stoker fired heating plants, the unit features corrosion resistant parts and completely sealed

Sell More Heaters

THERE IS A JOHN ZINK HEATER FOR EVERY HEATING NEED

Prospects don't walk away when you show JOHN ZINK Heaters—they buy! For both home and industry JZ Heaters offer customers just what they need in heating: automatically controlled even heat, fuel economy, utmost safety, and quiet operation. JZ Heaters are available in four popular models and many sizes—upright or horizontal CENTRAL HEATERS, louvre or radiant WALL HEATERS, UNIT HEATERS and FLOOR FURNACES. All JZ Heaters are AGA approved for natural, mixed or LP Gas.

OFFER YOUR CUSTOMERS
JZ BRAND HEATERS!

CENTRAL HEATER

UNIT HEATER

WALL HEATER



FLOOR FURNACE

Why JZ Heaters Are Money Makers

HIGH PROFIT—JZ Heaters bring a high margin of profit because less time is spent selling customers. JZ Heaters almost sell themselves.

EASY INSTALLATION—JZ Heaters are known for their ease of installation, takes only a short time when compared to other heating units.

EASY TO SERVICE—While compactly and sturdily built, all parts of a JZ Heater are easily accessible. Rarely are parts replacements needed.

JZ Heaters

in Four Popular Styles

FLOOR FURNACES. JZ gas fired floor furnaces are available in five conventional and short models with input ratings from 30,000 B.t.u/hr. They become a complete one-package heating unit when equipped with safety pilot and automatic temperature control.

CENTRAL HEATERS. Available in Vertical or Horizontal forced air models. Can be installed in attic, closet, basement, utility room, under the floor, or as a suspended unit. From 65,000 B.t.u/hr.

UNIT HEATERS. Model UHS Gas-fired, fan type suspended heater. Completely automatic. Available in two styles, attractively finished, quiet, safe and easy to install. From 44,000 B.t.u/hr.

WALL HEATERS. WH-25 Recessed Wall Heater fits standard 2" x 4" stud partitions on 16" stud centers. Barely 58" high. Available in standard or radiant styles.

Write For Free Literature



JOHN ZINK COMPANY

4401 South Peoria

Tulsa 5, Oklahoma

NOW... save time and slash costs

with the new

SILENT DUCT

TRADE MARK

METAL AND MATERIAL ALL IN ONE UNIT



HERE'S THE FIRST really important improvement that's come to you in years... *Elgen Silent Duct*, the modern flexible duct connection that abolishes vibration noise in furnaces, blowers, air conditioners and attic fans. Factory-assembled into a single rugged unit, *Silent Duct* does away with the old-fashioned time-wasting need for attaching woven fabric to metal in your own shop... saves you up to 60% of the cost of fabricating flexible connections!

Elgen Silent Duct is delivered in 100-foot (approx.) coils in a handy dispenser and *pulls out flat*, ready to use. It is made of 24-gauge galvanized steel fastened to long-life canvas* with top resistance to fire, water and mildew... and it's also available with heavy, top quality, non-porous asbestos.

Order *Silent Duct* from your jobber and start saving time and money that really count... if necessary, ask us for your quickest source of supply. And write us for literature that tells the whole story. Elgen Manufacturing Corp., Dept. A-5, 41-34 39th St., Long Island City 4, New York.

*Made under Govt. Spec. MIL-D-10860



HOW TO FABRICATE SILENT DUCT

1. Stand dispenser against bench.
2. Pull out required amount of Silent Duct.
3. Cut with shears.
4. Bend as required.
5. Seam by any desired method.

PAT. PEND.
UNION
MADE



A. F. of L.

ELGEN
SILENT DUCT

SAVES MAKING YOUR OWN FLEXIBLE CONNECTIONS

equipment developments

(Continued)

"Micro" switch contacts. The liquid filled temperature sensing element is coiled within the cover for protection. Control range is between 35 and 100 F. Switching action is provided so that the unit can also be used to regulate building ventilating systems.

Stapling Tacker

SPECIAL VARIATION of Model T5 outward clinch stapling tacker, designed for driving and clinching staples in hard-to-get-at places where a blade cannot be inserted for clinching — Bostitch, 1007 Mechanic St., Westerly, R.I. It automatically drives staples and turns the legs outward to clinch under or inside the work. Because no clinching blade is required, the machine can be used anywhere, no matter how far in from an edge, the company states. Applications include fastening insulation around ducts, stapling seams of flexible corrugated, etc.

Oil Fired Horizontal Winter Conditioner

HORIZONTAL OIL FIRED winter air conditioner with a 90,000 Btu output at bonnet, adaptable for attic, crawl space, utility room or basement installation in small and



medium size homes — Mayflower Air-Conditioners, Inc., E. 7th at Duluth Ave., St. Paul 6. This suspended unit is factory assembled and measures 21½ in. high, 24 in. deep and 65 in. long.

Electric Dehumidifier

NEWLY DESIGNED lightweight electric dehumidifier, featuring a compressor 33 per cent more powerful than last year's — Radio Corp. of America, 30 Rockefeller Plaza, New York 20. Designed to remove up to 14 quarts of moisture from the air every 24 hr, the unit gives adequate humidity control in rooms up to 12,000 cu ft in size, the company states. It weighs 64 lb.

Adhesive for Insulating Sheet Metal

"INSULAM" FIRE RESISTANT laminating adhesive for adhering glass fiber insulation pads and blankets to sheet metal — Paisley Products, Inc., 630 W. 51st St., New York 19. The adhesive is a synthetic rubber-like resin emulsion with quick "wet-tack" and suction to hold assemblies together until dry. It then becomes a water resistant adhesive film that will not support combustion,

equipment developments

(Continued)

the company states. The bonding strength of the assemblies withstands continuous heat of 375 F without delamination, according to the manufacturer. Applications include air conditioning and warm air heating ducts, etc.

Gas Space Heater

MODEL X-967, 60,000 Btu gas space heater designed for city, suburban or rural homes — Perfection Stove Co., 7609 Platt Ave., Cleveland 4. The porcelain-enamedled pressed steel burners have raised ports. Combustion chambers and radiators are porcelain-enamedled inside and out. Heaters for natural, mixed and manufactured gas have a manual control valve, a pilot burner and pressure regulator. LP models have a safety valve and manual control valve.

Room Air Conditioners

NEW LINE of room air conditioners, including window and console models — Burnham Corp., 2 Main St., Irvington, N. Y. Window models are available in 1/3, 1/2 and 3/4 hp models. The "Westchester" console model is offered in 1 and 1 1/2 hp sizes and is housed in a



mahogany cabinet. All units are furnished with automatic thermostatic control, and they cool, dehumidify, ventilate and heat (optional). The window type models are built on the tubular plan, meaning that housing is installed first, without chassis, the chassis then sliding into place.

Furnace Cleaner

"NU-VAC" FURNACE CLEANER weighing 25 lb and containing a new motor designed to give 70 in. water lift at the hose end — Empire Chemical Products Co., 10 Longworth St., Newark 2, N. J. There is an extra outlet on top for connecting a drop light, and there is a choice of a disposable, paper filter flameproof bag or a newly developed rayon bag, both designed to prevent suction clogging.

Permanent Aluminum Awnings, Canopies

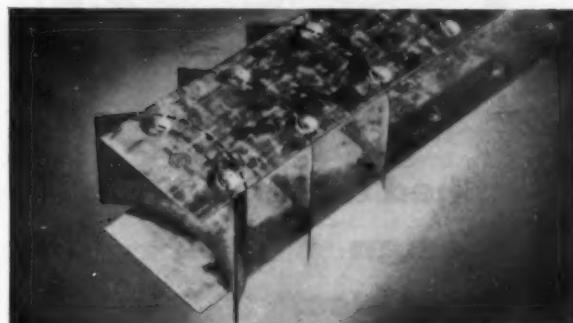
NEW LINE of permanent aluminum awnings and canopies — Alumatic Corp. of America, 2081 S. 56th St., Milwaukee 14. The awnings feature horizontal lines designed to blend with every style of architecture. They are constructed with an interlocking feature called "Lok-Tite" which adds rigidity and strength, the company

Absolutely without equal!

ALL-TITE VANE RUNNER...

TRADE MARK

YOUR QUICKEST, CHEAPEST METHOD FOR
INSTALLING VANES IN SQUARE ELBOWS



Blades are cut raw from your scrap...double blades formed with flanges as shown above. For elbows more than three feet high, two or more units can be stacked. For additional length on vane runners, overlap two pieces.

"WE FIND it the simplest, fastest, most economical way of fabricating and installing turning vanes"... "Your runner has cut our cost of installing vanes by 50%"... "We've ordered and reordered for all types of jobs." Those are the things that sheet metal contractors are saying about the *All-Tite Vane Runner* — and orders are pouring in!

The new, improved *Elgen All-Tite Vane Runner* with its unique slotted knobs is made of 24-gauge galvanized steel, engineer-approved to accommodate either single or double blades. It eliminates punching, notching, riveting, spotwelding and layout... *requires no special chisels or tools*. Vanes are locked in a jiffy with shears or hammer. Assembled unit is quickly fitted in elbow, fastened with screws, and is completely rigid and rattleproof.

The *Elgen All-Tite Vane Runner* comes in 8-foot lengths, 20 strips per bundle. Order from your jobber for top efficiency and real savings... if necessary, ask us for your quickest source of supply. And write us for full information and engineering data.

Elgen Mfg. Corp., Dept. A-5, 41-34 39th St., Long Island City 4, New York.

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UNION
MADE



A. F. of L.

ELGEN

ALL-TITE VANE RUNNERS

FASTEST...MORE PRACTICAL AND ECONOMICAL



**Shed those
design
shackles,
specify**

AGITAIR

You can give free rein to your creative planning and still rely on AGITAIR square and rectangular diffusers to provide draftless air distribution from any location. Custom-designed, with built-in diffusing vanes, in a wide variety of louvered patterns, they provide blows in 1, 2, 3 or 4 directions without use of blank-offs. AGITAIR diffusers need not be centrally located in an area if such placing does not agree with the decorative motif, or if a beam or other obstruction is in the way.

Moreover, AGITAIR square and rectangular diffusers are now available with or without removable, interchangeable cores. AGITAIR also brings you Stripline, the slender, continuous air diffuser with unlimited application versatility.

New 34-page Type R Catalog reveals how correct air distribution is simplified by AGITAIR. Contact your local AGITAIR representative, or write us direct for your free copy.

AIR DEVICES INC.
185 Madison Avenue, New York 16, N.Y.

AIR DIFFUSERS • FILTERS • EXHAUSTERS



equipment developments

(Continued)

states. Louvers are locked in place and can be snapped in and out easily, allowing changes in color to be made without bolts or use of tools. There is a valance gutter to funnel off rain. Stainless steel struts are used.

Air Conditioning Unit

MODEL US-CH "Capitolaire" store air conditioner, in 2, 3, 5, 7½, 10 and 15 ton sizes, for use in stores, offices and commercial buildings — United States Radiator Corp., 300 Buhl Bldg., Detroit 31. It is intended for remodeling older buildings or for installation in new ones, and it can be used for summer cooling and winter heating (heating coil section is optional equipment). Features include an adjustable grille, replaceable filters, quiet operation, and adaptability for installation either with or without ducts.

Filter-Evaporator Unit

"HOME COIL" filter-evaporator unit for use with remote condensing units or a cold water supply — Hastings Air Control, Inc., 3215 Leavenworth St., Omaha 5. Complete with cabinet, filters and humidity pan, it attaches to any warm air furnace. It is available in three sizes for homes with a maximum of eight rooms. Water up to 60 F can be used for operation, the company states.

Window Conditioner with Odor Neutralizer

"AIR FRESH'NER" device containing chlorophyll, incorporated as standard equipment in a ½ hp "deluxe" window air conditioner, which is designed to sweeten room air and kill odors — Remington Air Conditioning Div., Remington Corp., Auburn, N.Y. It fits into the side of the unit and may be turned on or off. With normal usage, one container lasts all season, the company states. Applications include eliminating odors from tobacco smoke, cooking, etc.

Gas Water Heater with Draft Diverter

BUILT-IN DRAFT DIVERTER for improved combustion in the new "Rex Cascade" gas water heater line — The Cleveland Heater Co., Dept. A, 2310 Superior Ave., Cleveland 14. The new line includes three underfired models with 20, 30 and 40 gal tank capacities. They are fully automatic, with 100 per cent shutoff, and are AGA approved for all gases, the company states.

High Gloss Sheet Metal

MODEL S-300GM rigid polystyrene alloy sheet with an integral high gloss surface finish — Campco Div., Chicago Molded Products Corp., 2717 N. Normandy Ave., Chicago 35. The surface finish resembles porcelain enamel. It is washable and can be fabricated inexpensively into complex shapes by vacuum forming or similar techniques used to form rigid thermoplastic sheet, the company states. Standard size sheets are 39 X 72 in., 0.080 and 0.100 in.

new literature . . .

New ASHVE Guide

THE 1954 HEATING, Ventilating and Air Conditioning Guide (32nd edition, \$10.00) features a new chapter on residential summer air conditioning — American Society of Heating and Ventilating Engineers, 62 Worth St., New York 13. Extensive revisions and additions have resulted in the enlarging of the technical data section to 1128 pages. Chapters brought up to date by major changes include those on heating load, fuels and combustion, chimneys and draft calculations, panel heating, air cleaning, automatic controls, and owning and operating costs. Listed and illustrated in the manufacturers' catalog data section are the products of 319 manufacturers. A 24 X 32 in. psychrometric chart, printed in two colors, is included.

Shaded Pole Electric Motors

BULLETIN No. 540201 presents information on shaded pole electric motors for use with furnace blowers, circulating fans, evaporative coolers, air conditioners, space heaters and similar applications — Universal Electric Western Co., 205 W. Rio Grande, Colorado Springs, Colo. Line drawings show principal motor dimensions and a performance chart gives data covering models ranging from 1/15 to 1/6 hp.

Standardized Warm Air Fittings

HOW STANDARDIZED FITTINGS help the warm air heating and air conditioning dealer increase his profits and build sales volume is explained in an illustrated eight page brochure — Air Distribution Institute, 2130 Keith Bldg., Cleveland 15. Pointers are given to help heating dealers simplify cost estimating and conserve on-the-job time. Illustrated are layouts for extended plenum, reduction (trunk and branch) and perimeter heating systems. The fittings contained in the system layouts are key numbered and listed by name for quick identification.

Metal Sheets for Roofing and Siding

CIRCULAR describes mica-protected metal sheets for use in industrial roofing and siding and roof decking — Plasteel Products Corp., McAdam Ave., Washington, Pa. According to the company, the use of mica produces a tough wearing surface that resists the extremes of climate and protects against atmospheric conditions such as acid fumes, and alkalies. The folder lists other literature available describing specific applications.

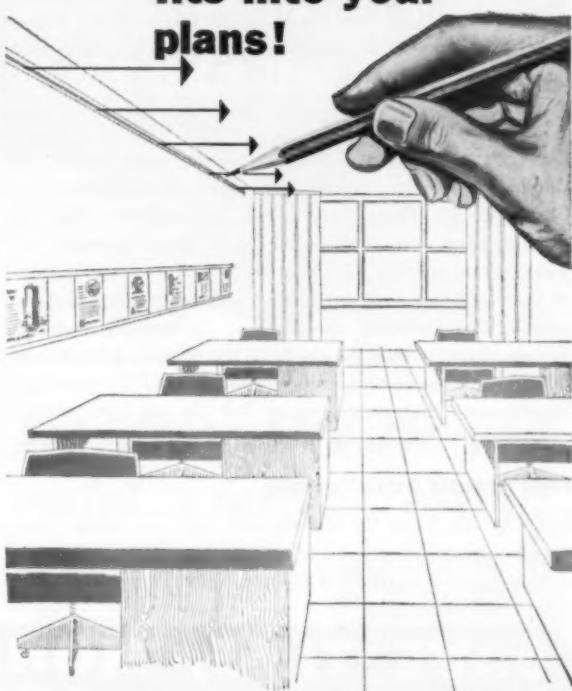
Packaged and Window Room Conditioners

LITERATURE describes window type room air conditioners (both conventional and casement types) and packaged air conditioning units for small commercial installations — Airtemp Div., Chrysler Corp., 1600 Webster St., Dayton 1, Ohio. Designed for consumer reading, the circulars are fully illustrated, present features of the various units, and show typical applications.

**See how
inconspicuously**

STRIPLINE

**fits into your
plans!**



**Unlimited air distribution
provided by slender
continuous diffusers
...another AGITAIR first!**

Stripline diffusers offer complete application versatility. They are ideal for installation in shallow lighting coves...window stools for air curtaining of glass windows or exposed wall areas...side of furred beams...or as a decorative border blanketing the entire area with noiseless, draftless air distribution. Custom built with AGITAIR's patented diffusing vanes, Stripline diffusers create maximum mixing and aspiration...quick temperature equalization and correct air distribution over any desired length.

Write for your free copy of
Catalog S-100 today.

AGITAIR STRIPLINE

AIR DEVICES INC.

185 Madison Avenue, New York 16, N. Y.
AIR DIFFUSERS • FILTERS • EXHAUSTERS

Stainless Steel for Industrial Uses

REVISED EDITION of *Allegheny Metal in Chemical Processing* (34 pages) covers the use of stainless steel in the manufacture of acids and other chemicals in general process industries, the plastics industry and others — Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 19. Included are corrosion resistance data and fabricating information.

Room Air Conditioners

BOOKLET points out to the consumer what points he should consider in purchasing a room air conditioner — Philco Corp., Tioga and C Sts., Philadelphia 34. It divides room air conditioners into three groups: 1) Year 'round models with reverse cycle systems that heat as well as cool and feature an automatic temperature control that prevents overcooling; 2) automatic room air conditioners that do not have the heating feature but do have automatic temperature control; and 3) room air conditioners that cool a room but do not have either reverse cycle heating or automatic temperature control.

How to Build Sales Volume

LEAFLET No. 44 of the *Management Aids for Small Business* series explains ways in which a small business concern can build up its sales volume — Small Business Ad-

ministration, Lafayette Bldg., Washington, D.C. Included is a check list of questions designed to reveal the weak points in a firm's sales management and to show which direction the firm's plans for improvements ought to take. The leaflet may be obtained free from any SBA field office.

Flow Control Valves

AUTOMATIC, manual and thermostatic temperature controls for oils, gases, liquids and refrigerants are summarized in a four page catalog for heating and cooling engineers, manufacturers or designers — A-P Controls Corp., 2450 N. 32nd, Milwaukee 45. Illustrated and briefly described (including data on application, capacity, outlet sizes, etc.) are: the single unit "Gasapack" line for natural, manufactured or LP gas; oil flow control valves for space heaters or furnaces and gravity fed oil burners; thermostatic accessories, solenoids, water flow regulating valves, filters and driers.

Oil Burner Controls

BULLETIN on heating controls for oil burners (GEA-6118, 12 pages) includes step by step installation photographs and provides information on the company's heating control exchange plan — General Electric Co., Schenectady 5, N.Y. Under the plan, dealers can turn in inoperative controls of any make and get factory rebuilt controls in return. The bulletin also describes free promotional aids available to oil burner control dealers.

SAVE TIME, MONEY and MAINTAIN TOP QUALITY **DURO-DYNE** PRODUCTS

"DURO-BLADE KIT"

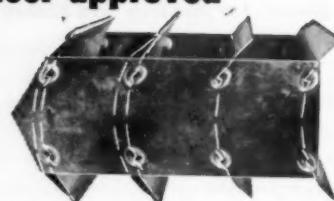
precision engineered
DAMPER HARDWARE

- Swiftest, simplest assembly
- Ideal for light or heavy dampers,
- 3" blades or wider
- Corrosion-resistant throughout
- Parallel or opposed blade action
- Can be screwed, bolted, riveted, welded, spot welded

the original, job-tested
"DURO-VANE RAIL"
fast, accurate least expensive way
to make engineer-approved

AIR TURNING VANES

Installed Cost
cut 50% to 70%



- Complete turning Vanes meet engineering specifications
- For Hollow or single Air Turning Vanes
- Eliminates layout
- Supplied in 8' lengths—200 ft. bundles

WRITE for Free new "Visual" Manual

DURO-DYNE CORPORATION
Dept. B, 800 3rd Ave. • New Hyde Park, N. Y.

new literature

(Continued)

Evaporative Coolers

CIRCULAR presents data on evaporative coolers featuring "AquaSpa" water assembly and two sets of mats — Alton Mfg. Co., 1112 Ross Ave., Dallas, Texas. Other features listed include low initial and operating costs. Engineering and dimensional information is given for five models ranging in capacity from 4000 to 12,000 cfm.

Aluminum Louvers

EXTRUDED ALUMINUM LOUVERS are illustrated and described in an eight page brochure — Sommerfeld Louvers, Inc., 207 E. 37th St., New York 16. Diagrams show applications of stationary, adjustable, self-closing and dual combination types. Also illustrated is a combination skylight and ventilator designed for use over stage roofs.

Furnace Pipe and Wall Stack

CATALOG describes "Spee-D-Lok" furnace pipe and wall stack, also standardized fittings for forced air and gravity installations — Superior Metal Fabricating Co., Niles, Ohio. Dimensions, drawings and prices are given for all equipment listed.

Baseboard Diffusers

THREE NEW BASEBOARD diffusers — No. 44 for continuous baseboard installations of 8 ft lengths or more, No. 452 high capacity 2 ft diffuser and No. 405 out-of-wall type — are described in a four page circular (S-282) — Hart & Cooley Mfg. Co., 500 E. 8th St., Holland, Mich. Installation methods are described in detail and are illustrated with line drawings. Also included is information on damper No. 44V for use with the company's line of baseboard diffusers.

Draft Controls

CATALOG SHEET describes and illustrates a line of draft controls — Windmaster Corp., P. O. Box 776, Columbus 16, Ohio. Eighteen drawings illustrate a step by step installation procedure.

Electrostatic Air Cleaner

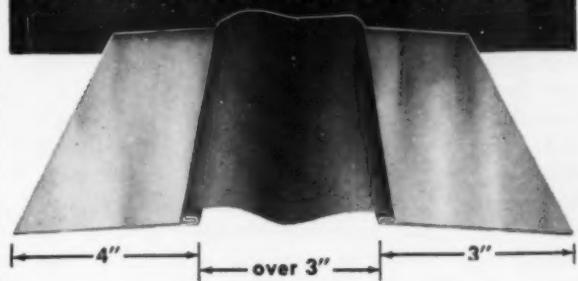
CEILING-SUSPENDED "Precipitron" electrostatic air cleaners are described in a four page bulletin — Westinghouse Electric Corp., Air Conditioning Div., 200 Readville St., Hyde Park, Boston 36. The bulletin illustrates how the unit may be installed in the cold air return duct of a conventional warm air heating system in either a horizontal or vertical position. The necessary service and utility connections are also listed. Also described is a floor unit for larger homes with up to 12 or more rooms.

Humidifiers, Float Control Valves

AUTOMATIC HUMIDIFIERS for conventional and counter-flow warm air furnaces and year 'round air conditioning units are covered in a 12 page catalog — Maid-O'-Mist,

NEW! DURO METAL-FAB

makes quality flexible ducts up to 70% faster than old methods



**pre-assembled for you
metal to fabric to metal!**

ONE-PIECE FABRIC AND METAL DUCT CONNECTOR

- For your protection, exclusive "Double-Loc" metal-to-fabric seam
- Fastest, simplest money-saving way to fabricate flexible duct connectors
- Wide metal edges ample to form all types of joints (clinch, flange, slip, etc.)
- Finest engineer-approved materials used throughout
- Required flat lengths quickly pulled from Dispens-o-Flat carton. (Packed in 100 ft. rolls)
- Stops vibration noise in furnaces
 - blowers • air conditioners • attic fans, etc.
- Duro Stapler eliminates costly sewing of fabric
- Available in U.L. approved Canvas, Asbestos, Neoprene Fiberglas

Typical types of
connector made
with DURO
METAL-FAB



**Write for DURO METAL-FAB
Samples and Literature.**

**D U R O - D Y N E
C O R P O R A T I O N**

800B Third Ave., New Hyde Park, L. I., N.Y.

PAT. PEND.
UNION
MADE

new literature

(Continued)

Inc., 3217 N. Pulaski Rd., Chicago 41. Also listed and illustrated are water line float control valves.

Techniques for Installing Insulation

A FOUR PAGE illustrated folder discusses techniques for installing insulation — Infra Insulation, Inc., 525 Broadway, New York 12. Diagrams and illustrations demonstrate how to install around ducts, between beams, on masonry walls, cement and wood floors, etc.

Aluminum in Architecture

A 16 PAGE brochure discusses the uses of aluminum in architecture — Reynolds Metals Co., 2500 S. Third St., Louisville, Ky. Many standard designs, such as are used in curtain wall panels, stores fronts, awnings, spanrels, siding, etc., are featured with brief descriptions of the advantages provided by aluminum in such applications. Fabricating operations, including forming, machining, casting and welding are discussed. Information is given on finishes for aluminum and on the various alloys. A partial listing of 16 mm movies available on a free loan basis is also given.

Ductless Air Heating System

A DUCTLESS forced air heating system using "Modu-Jet" recirculating units in combination with "Jet-Flow" and

"Forced-Flow" furnaces is explained in a four page circular — Royal Jet, Inc., 1024 Westminster Ave., Alhambra, Calif. The recirculating unit is designed to handle various types of installation applications — uses ceiling outlets or high or low wall outlets to distribute warm air to one, two or three rooms. Also available is an envelope stuffer describing "Tall Red" forced air furnaces with a capacity range of from 75,000 to 105,000 Btu input.

Perforated Steel Sheets and Plates

FOUR PAGE bulletin illustrates perforated patterns (both available for shipment from stock and supplied perforated to order) in carbon and stainless steel sheets and plates — Joseph T. Ryerson & Son, Inc., P.O. Box 8000 —A, Chicago 80. The sheets are designed for safety, ornamental and screening purposes and for use in fabricating articles such as cabinets, special shelving, etc. Typical layouts are shown for standard patterns.

Unit Heaters with Cast Iron Heat Exchangers

BULLETIN No. 543-B describes a line of commercial warm air unit heaters with cast iron heat exchangers — Dravo Corp., 1203 Dravo Bldg., Pittsburgh 22. Output capacities are listed as 88,000 to 160,000 Btu per hr. Two types are covered: one for suspended mounting and one that is built into duct type heating or air conditioning systems. Tables list outlet temperatures, dimensions, etc. All models are AGA approved for natural, mixed or manufactured gases.

BE HONEST --

"Do we need a Quality Line of Low Cost Units to Compete for Volume Sales?"

BE PRACTICAL --

"Is such a Line of Automatic Furnaces Available?"

BE WISE -- ACT NOW . . . INVESTIGATE



OIL FIRED — GAS FIRED

- **Basement Units — Gravity or Forced Air • Suspended Units**
- **Up Flow & Down Flow Hi Boys Built to Serve • 20 Year Guaranty**
- Priced to Sell • Lowest Prices ever.**

**J. V. PATTEN COMPANY
SYCAMORE, ILLINOIS**

Established 1900

Incorporated 1928

"Our Country's Strength is Created..."

REESE H. TAYLOR
President, Union Oil Company of California



"Our country's strength is created by the responsibility and solidarity of individual citizens in a self-chosen government and economy. It can—and must—be perpetuated against all who seek to undermine it. The men and women who invest regularly in United States Defense Bonds are contributing to our national integrity and to the traditions of personal independence so characteristic of a free people."

Every pay day, 6,500,000 employed men and women . . . "are contributing to our national integrity and to the tradition of personal independence . . ." by the systematic purchase of United States Defense Bonds.

How important is this contribution to national economy and personal security? Let's look at a few figures.

- the cumulative purchases of 6,500,000 Payroll Savers add up to \$130,000,000 per month.
- the number of individual E Bonds sold in 1951 totaled 68,069,000 pieces—8% more than in 1950.
- purchases of \$25 and \$50 E Bonds—the denominations popular with Payroll Savers—were greater than the sales of \$500 and \$1,000 E Bonds.

- monthly redemptions of unmatured E Bonds during each of 9 months (April to December, 1951) were less than 1% of the amounts outstanding.
- the cash value of Series E Bonds held by individuals on December 31, 1951, amounted to \$34,727,000,000—\$4.8 billions more than the cash value of Series E's outstanding in August, 1945.

That Americans have built personal security and a reservoir of purchasing power exceeding \$34.7 billions is due in no small measure to the patriotism and foresight of men like Mr. Taylor and other leaders of industry who have made the Payroll Savings Plan available to their employees.

For help with your Payroll Savings Plan, phone, wire or write to Savings Bond Division, U.S. Treasury Department, Suite 700, Washington Building, Washington, D. C.

The U.S. Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

AMERICAN ARTISAN



GET MORE JOBS DONE

Make YOUR Customers Happier



Install PATCO Warm Air Baseboard

The newest type of home heating is warm air baseboard. The best is PATCO because it offers your customers so many advantages over other types. In addition, it saves you time, labor, permits you to get more jobs done because:

1. You just count the outlets, order the proper number of top and side take offs, the correct amount of pipe. You don't have to make dampers or transformers, cut elbows, ducts.
2. There are no tapered ducts and many different size fittings to fuss with. A smaller extended plenum is used with 4" or 5" runs to each room.
3. The PATCO connector that is available simplifies connection between 4" or 5" round pipe and baseboard.
4. Low cost industrial downspouting in 10' lengths is used for 4" and 5" diameter pipe.
5. To install the baseboard itself, you simply nail it to studs, snap on the diffuser face.

Now you can see why contractors throughout the country tell us they can get more jobs done and increase their profits with PATCO Warm Air Baseboard.

See your jobber for details. Ask him or — or write us direct, Dept. A — for free copies of this new folder. It describes the advantages PATCO Warm Air Baseboard offers YOUR customers.



PATCO MANUFACTURING COMPANY
231 NORTH BREAD ST. PHILA. 6, PA. LOMBARD 3-2416

we hear that . . .



A GROUP of delegates to the convention of the Sheet Metal Contractors' Association of Wisconsin pauses to examine an elbow machine during the course of a tour through the Milwaukee plant of Inland Steel Products Co.

DELEGATES attending the recent convention of the Sheet Metal Contractors' Association of Wisconsin were invited to visit the Milwaukee plant of the Inland Steel Products Co. The plant tour — lasting one and a half hours — included luncheon in the employees' cafeteria. Each guest received a "Milcor" tool rack as a gift upon departing.

THE LENNOX FURNACE CO. has developed an extensive advertising program under which it is supplying dealers with a variety of promotional material, including direct mail campaigns, radio spots, newspaper mats and a number of other sales and merchandising aids. John W. Norris, president, says, "The tremendous and increasing public demand for air conditioning will be an important factor in helping us to achieve the record sales quota we have set for ourselves in 1954."

SKUTTLE MFG. CO. recently held open house to celebrate the move from Detroit to its new plant in Milford, Mich. More than 90 business and civic leaders, including the mayor and members of the city council, attended. Following a tour of the plant, a buffet supper was served.

SERVEL, INC. plans the building of a new 267,000 sq ft warehouse in Evansville, Ind. The building will be located on eight acres of ground adjoining the Servel plant. It will be of steel frame construction, with transite siding and steel deck roofing. There will be two railroad sidings inside the building, and 23 trucking doors on the north side of the building. W. Paul Jones, president, said that the building of the new warehouse will enable the company to store manufacturing materials and finished products at the factory instead of in distant warehouses. "Warehousing is an important factor in a business like ours, which has seasonal sales peaks in the warmer months of the year," he said. "We have spent

SMALL... WALKER Junior Fuel Saver Automatic Draft Regulators come in four types—engineered for use with space heaters, circulators, water heaters, trailer stoves and all other heating equipment within that range.



There's a
WALKER
Fuel Saver
AUTOMATIC DRAFT REGULATOR
for Every Heating Application



LARGE... The Ball Bearing Type WALKER Industrial Fuel Saver is available in 16" to 48" sizes... for applications in schools, office buildings, apartments, stores and manufacturing plants.

AND IN BETWEEN
There are two types of WALKER Domestic Fuel Savers to meet draft control requirements of central heating plants in homes, apartments, and multiple housing projects.



Only WALKER Makes a Complete Range of Sizes of Automatic DRAFT REGULATORS



• Whether for trailer stoves or for industrial boilers serving the nation's largest housing project—the right Walker Fuel-Saver Automatic Draft Regulator can be selected from stock. Twelve Million sales...thousands of successful applications throughout the range of heating...speak for themselves...give proof of Walker design, craftsmanship and engineering. You can be sure that there is a Walker Fuel-Saver ready for any application you may have.

SEND FOR CATALOG

Twenty pages show all types, sizes in full line. Applications and installations described. A valuable handbook FREE, if you write...



NEW WALKER VENTURI-TOP CHIMNEY CAP
is winning approval on more and more installations. Proved to be ideal in design and construction to correct insufficient draft and stop down draft...and to solve ventilating problems. Sizes from 3" to 8" ready for immediate delivery.

WALKER MANUFACTURING & SALES CORP.
1730 PENN. ST.
ST. JOSEPH, MO.

Here's
What
You've
Been
Looking for!

POWER ROOF VENTILATOR

CARNES

You'll find everything you want with Carnes Power Roof Ventilators. Available for all types of commercial and industrial installations in a large range of size—duct sizes from 4" to 36" and capacities from 100 CFM to 17,600 CFM. Plus—quiet operation; easy installation; exhaust without back draft; and longer service.



(Above Style Available in sizes up to 36")

... this all-aluminum power roof ventilator with the

famous **CARNES** "know-how"

LOW SILHOUETTE — for a neat installation that will not extend above the normal roof parapet.

AVAILABLE — Shipment of all sizes and types of ventilators can be made without delay.

COMPETITIVELY LOW-PRICED — You'll be amazed at the price of Carnes Roof Ventilators. Prices are in line with ordinary ventilators.

NON-SPARKING ALUMINUM FAN WHEELS — This important safety feature is standard equipment. Available in both backwardly inclined centrifugal fan wheels and axial flow fans.

ALL-ALUMINUM CONSTRUCTION — For years and years of dependable non-rusting service and highest quality appearance.

CARNES

The Most Talked About Name in Air Distribution

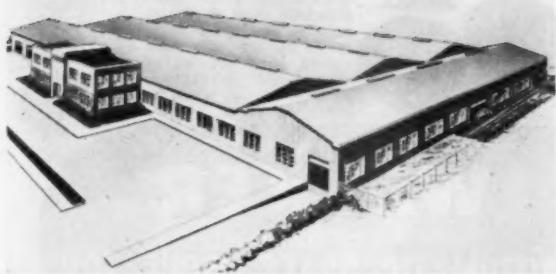
W. R. CARNES CO.

VERONA, WISCONSIN

large sums of money for warehouse space in the past so that we could maintain production and employment on an even level during the whole year. It has been our policy for many years to keep producing air conditioners during the so-called 'off-season' months, and store them until the heavy selling season arrives. With the addition of this warehouse, our trucking, storage and handling operations will be greatly simplified."

DEALERS of the Williams Heating Div., Eureka Williams Co., have reported that sales for January and February were 60 per cent ahead of last year's sales for the same two months. "The factory's major contribution to this excellent sales record," according to C. G. Branch, manager of the division, "is a promotion program featuring the offer of a clock thermostat free with every installation. The promotion includes newspaper ad mats, consumer post cards and radio and TV announcements. Factory sponsored advertising in 33 metropolitan newspapers lends additional impetus to dealers' activities."

THE MARLEY CO. has built a new plant in Louisville where it has begun the production of steel "Aquatowers" ranging from 2 to 60 tons in capacity. Also in production is the company's line of air cooled heat exchangers. The new plant, with 77,000 sq ft of production space,



AT ITS NEW PLANT in Louisville, The Marley Co. is manufacturing packaged water cooling towers and air cooled heat exchangers

supplements the company's other manufacturing facilities in Kansas City, Kans.; Stockton, Calif.; and Houston.

ASHBURN SUPPLY CO. has completed a new warehouse addition to its plant at Culver City, Calif. The 8000 sq ft building will be used exclusively for storage space.

INLAND STEEL Co. is building a second continuous galvanizing line and is making improvements in its cold rolled sheet department.

THE TRADE NAME "Wonderair," employed last year by the air conditioning division of Servel, Inc., to identify its room air conditioners, now will be applied to the



No raw edges to rust...

Cincinnati Elbows, hot dipped in zinc *after* formation, positively guarantee a rust-proof longer life. These elbows are tapered to fit any size standard pipe. Available in any size, angle and metal, including galvanized steel, stainless steel, copper and aluminum. Give your customers the best elbow available.

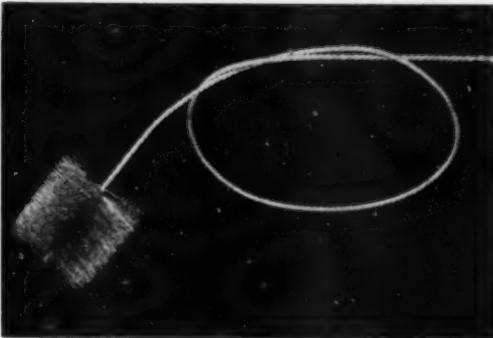
ASK YOUR JOBBER.

*Cincinnati Elbows fit better
because they're made better!*

CINCINNATI ELBOW CO.
2021 EASTERN AVE., CINCINNATI 2, OHIO

SCHAEEFER ROUND FURNACE BRUSHES

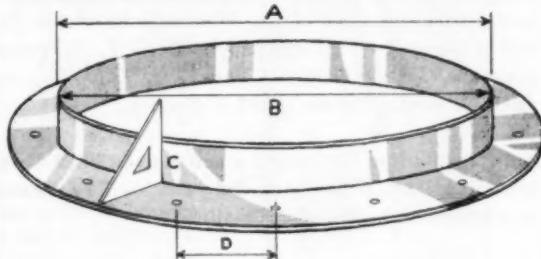
serve longer under hard use



Made of special Silver Bright Rustproof Wire, these Round Furnace Brushes do a faster, more thorough cleaning job, and offer a longer lifetime of service. Available in eight sizes, from 3" to 5" diameters, with 4 or 5 foot wire handles. Also supplied with Black oil tempered wire. Write for catalog and prices.

LOOK for the trademark **SCHAEEFER BRUSHES**
—MILWAUKEE—
SCHAEEFER BRUSH MFG. CO. BUY SCHAEEFER
117 W. WALKER STREET • MILWAUKEE 4, WIS. ... IT'S SAFER

Correctly Rolled ANGLE RINGS!



- ✓ A - A TRUE CIRCLE CORRECT ✓
- ✓ B - DIAMETER CORRECT ✓
- ✓ C - 90° ANGLE CORRECT ✓
- ✓ D - BOLT HOLE SPACING CORRECT ✓

✓ Check our Angle Rings! You'll find they check correctly on all four counts. Rolled to specification to meet your EXACT needs. We also roll rings made of tees, channels, flats, rounds, pipe and tube — all correctly rolled with skill and care.

Write for our circular and list of stock sizes and discounts.

Phone: Blshop 7-4255

NATIONAL METAL FABRICATORS
2140 S. SAWYER AVE. CHICAGO 23, ILL.



with **Dowagiac's**

DIRECT TO DEALER PLAN

- It's simple, easy, profitable and you're in business for yourself.
- There are no frills — no jobbers or distributors to cut in on your profits.
- You offer the nationally known Dowagiac furnace line backed by 27 years of customer satisfaction.
- You remain independent! No quotas — no forced inventory.
- Get the details — learn how to put more money in your pocket.

DOWAGIAC STEEL FURNACE CO.
DOWAGIAC, MICHIGAN

Send today for details

**FIRST STEP to
More Money in
Your Pocket!**



SURE, we'd like to make more money!

We are interested in your "DOWAGIAC DIRECT DEALER PLAN" and will carefully consider the agency. Please send complete catalog and prices.

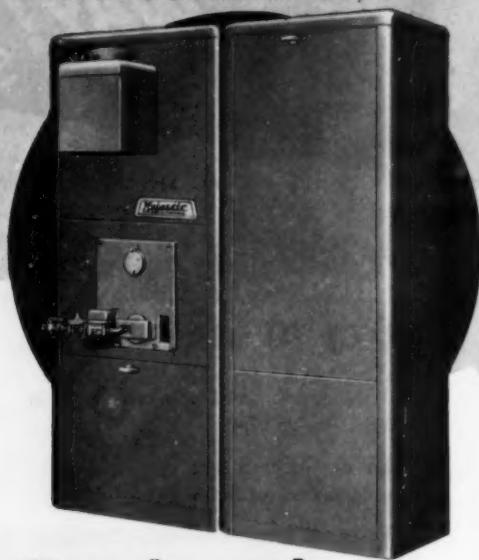
Signed _____ Firm _____

Address _____ Street _____ City _____ State _____

By _____ Name _____ Position _____

We use NO high-pressure selling

Majestic matched Air Conditioners



Year 'round automatic comfort

Majestic's complete line of fully automatic gas or oil-fired air conditioners . . . up to 400,000 BTU heating capacity and refrigeration capacity to match.

Here's the answer to today's demand for quick, convenient heat and matching summer cooling in twin units, in horizontal flow, upflow or counterflow models. AGA and UL approved equipment!

WRITE
for details on the
profitable, complete
Majestic line

TODAY

The **Majestic Co., Inc.**
394 Erie Street
Huntington
Indiana



we hear that

(Continued)

entire line of air conditioning products (except for the larger volume water chillers.)

A NEW TRANE CO. research and testing laboratory devoted exclusively to heat transfer problems — including the heating of homes — will be dedicated at La Crosse, Wis., on May 20, 22 and 23. The laboratory, which triples the company's experimental and product development facilities, will also be used to study such problems as cooling jet planes, air conditioning skyscrapers, providing heat exchangers for atomic plants, etc. At a dinner on the first day of the dedication, Robert Le-Baron, Assistant to the Secretary of Defense (Atomic Energy) and chairman of the Atomic Energy Commission's military liaison committee, will talk on peacetime atomic power before a limited number of guests. His talk will be broadcast on a nationwide hook-up by CBS.

PRESTON G. CREWE, executive vice president and treasurer, Webster Electric Co., was recently elected president of the Manufacturers' Association of Racine. Mr. Crewe has been active for many years in that association and other civic organizations. He has also been active in the oil heating field and is currently a member of the board of directors of the Oil Heat Institute.

JAMES L. MEAGHER, general manager, Anchor Div., Stratton and Terstegge Co., has been elected a director of the company. Mr. Meagher joined the firm in 1946, and became general manager of the Anchor Div. in 1953. Charles F. Atkinson was elected a vice president of the company by the board of directors. Mr. Atkinson is also general manager of the Wholesale Hardware Div. and a director of the company. Merle E. Robertson, president, Liberty National Bank and Trust Co., was elected a member of the board of directors.

SID HARVEY, INC. has opened a new store at 3812 Governor Printz Blvd., Wilmington, Del., which will be operated as a branch of the Philadelphia office.

MUELLER CLIMATROL was recently honored for its 30 year record of participation in a regular local event, the Milwaukee Home Show. H. P. Mueller, Jr., vice president, represented his firm and accepted the commemorative gift from George L. Faber, home show general chairman.

Ross M. WALLIS, formerly manager of the Heating and Air Conditioning Div., The Meyer Furnace Co., was recently made vice president of the company. Mr. Wallis has been with the company since 1934 and is widely known in the heating industry through his work on National Warm Air Heating and Air Conditioning Association committees. He is currently chairman of the association's Manual 9 committee. Arthur R. Gilkerson,

Longer length for less work . . . Compactly nested for easier handling, storage . . .

CHAMPION

"FIVE-FOOTER" SNAP LOCK PIPE

In five-foot lengths. 28 and 30 gauge in 4", 5", 6", 7", and 8" diameter. Compactly, safely packed, nested ten lengths to a carton (50 feet). Easily handled by one man. Snap lock stays locked, even though dropped.

Also in 2 foot lengths. 28 and 30 gauge in 3" through 12" diameters.

Order your CHAMPION "FIVE-FOOTER" TODAY!

CHAMPION

CHAMPION FURNACE PIPE COMPANY
211 Eaton Street, Peoria, Illinois • Phone 6-4639



How to Find and Keep New Business During Your "Slack Period"



There's no "slack period" in the furnace and boiler cleaning business. The cleaning business keeps your service crews busy all year, contacts and KEEPS new customers by firmly establishing you as an authority — the man to call for all other heating needs.

Join the many others who are building cleaning businesses this year with high quality Premier Furnace and Boiler Cleaners. Premier machines are the world's most widely used furnace cleaners!

- Separately ventilated motor — prevents burnouts on hot jobs.
- Extra large filter area — for continuous, on-the-job operation.
- Dual purpose — powerful vacuum unit PLUS portable hand blower.

Premier Furnace Cleaners, the oldest name in the furnace cleaning business, make cleaning jobs easy, keep the jobs profitable. Compact, easy to handle, a low cost Premier Cleaner allows one man to average four profitable jobs a day. And customers like the way Premier units handle messy work so thoroughly and quickly.



755 Woodlawn Avenue, St. Paul 1, Minnesota
TAKE THE FIRST EASY STEP TO A NEW, MONEY-MAKING BUSINESS — WITH THIS COUPON. Be ready for the warm-weather slack period. Act now!

PREMIER COMPANY, Dept. 406
755 Woodlawn Ave., St. Paul 1, Minnesota

Without obligation, please send complete details on the Premier Furnace Cleaner.

NAME

FIRM

ADDRESS

CITY ZONE STATE

we hear that

(Continued)

with the company since 1937, has been named manager of the Heating and Air Conditioning Div., succeeding Mr. Wallis.

AN AGREEMENT has been made between Sundstrand Engineering Co. and H. & J. Boyer Co., Paris, providing for the manufacture and distribution of Sundstrand oil burners in Europe. The Boyer company, which specializes in heating, ventilating and air conditioning, will designate a European manufacturer to produce the burners and will supervise their construction and distribution. Howard Boyer, representing the Paris firm, said that oil is becoming a popular heating fuel throughout Europe, partly because of the current lack of wood and low grade of coal. He explained that European oil refining industries are enlarging facilities rapidly so that oil for fuel can be delivered in large quantities.

IDEN ASSOCIATES has changed its name to Ventfabrics, Inc., and has moved into new offices at 640 N. Kedzie Ave., Chicago 12.

A SERIES of three dealer mailings on gas and electric water heaters has been sent out by Norge Div., Borg-Warner Corp. Tear-out business reply cards, when returned by dealers to the factory, will be passed on to distributors for follow-up.



PERFECTION Stove Co.'s merchandising program includes the telecasting of Friday night movies from a Cleveland TV studio

PERFECTION STOVE CO., in cooperation with the Decker-Reichert Steel Co. and 42 northern Ohio furnace dealers, is sponsoring a series of TV movies on Cleveland's station WXEL.

THE 100,000TH "VORNADO" air conditioning unit recently came off O. A. Sutton Corp.'s production line. Company officials, who early in the year estimated that they would triple their 1953 sales, state that dealer and distrib-



Darling it's so exciting . . .

I just can't wait

to see those sensational, new

STANDFORATED Perimeter Baseboard Registers

WITH SLIDING DAMPER CONTROL

- Used in homes, schools, churches and commercial installations.
- Comes in four foot sections.
- Simplifies balancing of heating systems.
- Fabricated of 20 gauge steel.
- Finished with Prime Coat only—special finishes on request.

Standard Stamping & Perforating Co.

3137 WEST 49th PLACE, CHICAGO 32, ILLINOIS

**BACKED BY EXPERIENCE
IN MANUFACTURING!**

**THE NEWEST FIELD FOR
APPLIANCE PROFITS!**

**PACKED WITH
SALES FEATURES!**

Majestic
HOME INCINERATOR

**The Double-Duty UNIT
that disposes of BOTH**

**TRASH
and
GARBAGE**

**Gas-Fired and
Fuelless Units**

**Models to Fit
Any Pocketbook!**



Exclusive Majestic Incinerator features mean a real build-up in dollar volume for you! You can offer *extra convenience* in an easy-to-buy package—the *double-duty* unit that ends all problems of trash burning and garbage disposal. The complete Majestic line includes gas-fired and fuelless models, for kitchen, basement, or utility room installation.

Model 10-G illustrated: the automatic gas-fired unit with drying pilot and direct-fire burner. **Dimensions:** 20" wide, 24" deep, 36 $\frac{1}{4}$ " high. **Capacity:** two bushels. **Flue:** requires 7" smoke pipe outlet and may be used with any chimney flue 6" or larger. **Burner:** monoport, 18,000 BTU rating, incinerates. **Pilot:** automatic, 1500 BTU rating, dehydrates. **Finish:** gleaming white enamel over rust-resisting Poly-Kote base.

For Full Details on Majestic's Line
SEE YOUR JOBBER OR WRITE TODAY

The Majestic Co., Inc.
110-A Erie Street Huntington, Indiana

In Our 88th Year
HANDY

Warm air fittings
and duct work
are as modern
and as up to date
as are the newest
blue prints with
which you are
working.... and
they help keep your
Costs down.

Our Catalog No.
54 is yours on
request

F. Meyer & Bro. Co.
Peoria, Illinois.
"The Handy Pipe People"



GET ALL THE FEATURES

WITH A

Pullman

FURNACE & BOILER
VACUUM CLEANER

and Power Blower

COMPARE THESE PULLMAN FEATURES WITH ANY OTHER VACUUM CLEANER

- ① Powerful turbine type suction and ② automatic power blower coupling.
- ③ Balances for one-hand carry and ④ has low, non-tip, center of gravity.
- ⑤ Auxiliary disposable paper filter and ⑥ NO outside bag to snag or tear.



CUT HERE

OH

Pullman Vacuum Cleaner Corp., Boston 19, Mass.

Send information on Boiler & Furnace Vacuum Cleaning.

SIGNED _____

COMPANY _____

STREET _____

CITY _____

ZONE _____

STATE _____

we hear that

(Continued)

utor purchases and sales indicate they were too conservative in their estimate. Newest addition to the company's line is a 1½ hp self-contained window unit.

FRANCIS S. RUSSELL, president, RCS Tool Sales Corp., and vice president, RCS Engineering Corp., has resigned from both corporations and sold his entire interest in them. A new corporation has been organized under the name of Davrus Corp. in which Mr. Russell and Dale D. Davis, regional sales representative for RCS, are the principal stockholders. The Davrus Corp. has offices and warehousing facilities at 200 Moen Ave., Joliet, Ill.

THE LENNOX FURNACE CO. has provided awards totaling \$500 for the winners of the architectural competition being sponsored by the Ann Arbor Junior Chamber of Commerce in connection with its Annual Builders and Merchants Show to be held May 19 to 23. Designs to be submitted are for a three bedroom house with a total living area not exceeding 12,000 sq ft. Air conditioning is to be featured in the plans.

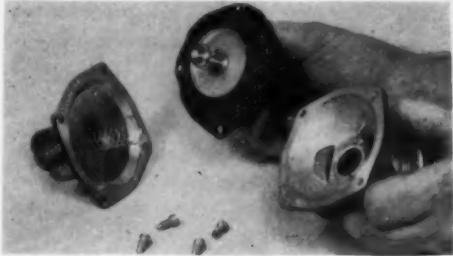
WILLIAM G. HARMS and William Harms, Jr., have retired from the Rock Island Register Co. Mr. Harms, Sr., has been with the company for 40 years, serving as president since 1950. Mr. Harms, Jr., was the company's treasurer during 1953. The outstanding shares of capital stock have been purchased by the families of the founders of the business, and the new board of directors has elected the following officers: John J. Burgess, president; Edwin M. Burgess, vice president; George W. Burgess, secretary; and Helen E. Burgess, treasurer.

THE MEYER FURNACE CO. has been conducting a series of air conditioning schools throughout the country. The courses are designed to give the dealer sufficient information to install, service and sell residential air conditioning equipment. Schools have been held so far in St. Louis and in Joliet, Rockford and Peoria, Ill. Others are scheduled for points in Ohio and Michigan.

RECENTLY a "Winkler" dealer-of-the-month plaque was awarded to Virgil W. Gibson of Wapella, Ill., by the U. S. Machine Div., Stewart-Warner Corp. The promotional activity which won the plaque for Mr. Gibson's company — The Gibson Building and Supply Co. — revolved around an open house celebration in a new sales room completed in the fall of 1953. Mr. Gibson invited all his customers to attend the open house. He advertised the opening in all local papers and ran four daily announcements on a local radio station. Despite the fact that the town's population numbers only 500, 1000 visitors registered during the day long program. The names of 123 prospects were obtained and three oil burners were sold while the open house was in progress. Equipment demonstrated included two LP burners which

improved performance—new sales appeal

for
small
gas
appliances



Hallmark
of gas heating progress

MAXITROL

Sold on the Pacific Coast by PACIFIC SCIENTIFIC CO., San Francisco, Los Angeles, Seattle, Portland

Here's the new Maxitrol RV-41 regulator, designed to bring improved performance, new sales appeal to all small gas appliances. Small and compact, it features a non-metallic resilient valve seat that provides excellent lock-up characteristics in addition to accurate regulation over a wide range of inputs.

The RV-41 saves on installation time, too. Its breather



orifice serves as its own leak limiting device in areas where these devices are acceptable. And, you can install the RV-41 in crowded, cramped places. All parts are available for servicing from the top. An inexpensive product that eliminates service call-backs, insures optimum adjustments for the life of the appliance. Maxitrol Company, 12200 Beech Road, Detroit 28, Michigan.

Tomorrow, as yesterday, you may look to MAXITROL for engineering and product leadership.



WRITE TODAY FOR THE AMAZING FACTS AND
LEARN HOW YOU CAN CUT PRODUCTION
COSTS WITH A BETT-MARR

BETT-MARR MODEL
14SM—A lower priced 2-wheel sheet metal band
saw with 13½" throat is
perfectly adequate for
work not requiring maximum
throat depth.

MODEL 24S—Complete
with riser bar insert and
4 sheet metal clamps. Only
61 inches high—compact,
fits most any space—
depth 44"; width 22"; table
sizes 20"x22".



MODEL 24S

THE AMAZING 3-WHEEL BAND SAW
designed especially for
FAST, SMOOTH
stacked sheet metal cutting

Save costly labor hours—get smoother, accurate cutting of stacked sheet metal with this new Bett-Marr three-wheel band saw. It's big enough to do most any job, small enough to fit most any space, and costs much less than any other comparable power saw.

A Bett-Marr in your shop will pay for itself quickly. Cut your production costs by stacked cutting with a saw that's especially designed for sheet metal cutting.

Does BIG! Costs LITTLE!

100 to 3000 FPM BLADE SPEEDS—Quickly adjusted for cutting iron, steel, forgings (100 FPM); stacked aluminum or galvanized sheets, bronze, brass, copper (600 FPM); wood, plastics, stainless steel (3000 FPM) without blade chatter.

CUTS 50 to 70 STACKED SHEETS—Up to 15 inches per minute; cutting accuracy is assured by case hardened guides with carbide back-up bearings (adjustable up to ½" blade width).

PERFECT BLADE CONTROL—Flanged wheels keep blade in position for smooth radius cuts and perfect straight line cuts. Blade positively will not slip off wheel in operation.

RUGGED ALL CAST FRAME—The rugged, all-cast frame gives perfect stability, eliminates blade chatter and assures smooth-cutting performance at all speeds.

POSITIVE 2-WHEEL CHAIN DRIVE—Prevents blade slippage. All ballbearings are Neoprene sealed for lifetime operation. Blade and wheels are fully enclosed for maximum safety.

BETT-MARR MFG. CO.

HOPKINS, MINNESOTA

were used to cook hundreds of wieners served to the guests.



SEVENTY-FOUR new dealer salesmen from all parts of the country attended an intensive training program at the Jackson, Mich. plant of the Timken Silent Automatic Div., Rockwell Spring & Axle Co.

THE TIMKEN SILENT AUTOMATIC DIV., Rockwell Spring & Axle Co., recently conducted an intensive training course for dealers at its factory in Jackson, Mich. The course is given several times a year. Approximately 10 per cent of those attending are dealers who are retaking the course to keep abreast of product innovations and new selling methods.

H. LIEBLICH & Co., Inc., oil heating engineers and heating contractors, will distribute S. T. Johnson Co. oil burners on an exclusive basis in the state of New York and parts of New Jersey and Connecticut. Distributorships in cities of the above territories are now being established by the Lieblich company.

A CORRESPONDENCE COURSE on the installation and servicing of domestic oil burners is being offered by the Eastern Correspondence School of Valley Stream, Box 272 E, L. I., N. Y. The state's education department has approved the course, which consists of 19 lessons.

THE EXECUTIVE, sales and advertising departments of Janitrol Heating and Air Conditioning Div., Surface Combustion Corp., have been consolidated with manufacturing and engineering units in Columbus. The organizational change affects over 25 key personnel who have been transferred to Columbus from the Toledo general offices. Heading the Janitrol division and allied operations as general manager at Columbus is Robin A. Bell.

ONE OF THE LARGEST single installations of gas fired unit heaters in the country has just been completed in the General Depot of the Army Quartermaster Corps in Memphis, Tenn. The United States Air Conditioning Corp. reports that six carloads of gas fired unit heaters,

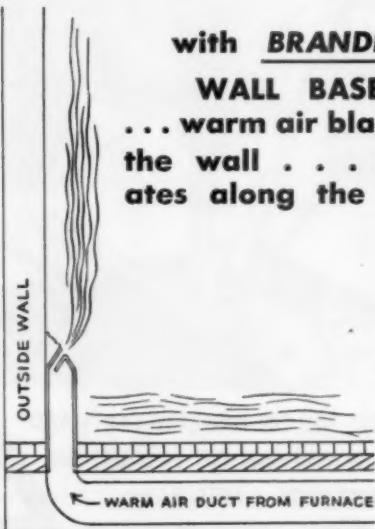
"BEST" BY ALL TESTS

Experiments are over . . . you can be sure when you buy Brandes Wall Base for forced warm air heating system installations. It's proved performance at low cost! Write the Brandes Company, 2046 Winnebago Street, Madison 4, Wisconsin.

BRANDES* WALL BASE HEATING

with BRANDES

WALL BASE
. . . warm air blankets
the wall . . . radiates along the floor



*PATENTED WALL BASE HEATING!

HOW TO SPEED TOUGH JOBS

...make more profit



Does Job Faster. Double wash tank is fabricated from 16 gauge cold roll steel. Strong, uniform welds prevent leakage.



Fabricates Air Duct. "Lincwelder's" steady easy-to-hold arc minimizes danger of burn through on 18 gauge galvanized iron.

IT costs less to weld sheet metal using Lincoln's "Lincwelders". Simple to operate and low in price, "Lincwelders" make your tough welding jobs simple. Welds are solid, more uniform. There's less danger of burn through because of Lincoln's accurate current control, according to reports from sheet metal contractors.

SEE THE LOW-PRICED "LINCWELDER"

"LINCWELDER" DC-250-MK

With Dual Continuous Control to select both type of arc and arc intensity.

ONLY LINCOLN HAS DUAL CONTINUOUS CONTROL

Have a Lincoln representative show you where and how you can save money on sheet metal fabrication by welding. Or write for free Bulletin 1332.



THE LINCOLN ELECTRIC COMPANY
DEPT. 3903 • CLEVELAND 17, OHIO



now ROBERTS-GORDON puts
"The hot spreader flame kid"
ON TELEVISION



...another reason why
ROBERTS-GORDON

means greater consumer
recognition and acceptance

Roberts-Gordon, pioneer manufacturers of gas-heating equipment — including the exclusive patented Gordon Spreader-Flame burner and two thrifty, new firsts . . . a hot water heating boiler — the "GORDONEER", and the GORDON-AIRE Winter Air Conditioners . . . now gives you

TELEVISION ADVERTISING

in your own city, on your local television stations,
OVER YOUR OWN SIGNATURE !

WRITE OR PHONE
FOR THE DETAILS

NOW

... phone Buffalo
— HU. 8400 —

or send this coupon SPECIAL DELIVERY !



ROBERTS-GORDON . . . Buffalo 6, N. Y.
or PITTSBURGH WATER HEATER CO., Ltd., Grimsby, Ontario

What are ALL the reasons Roberts-Gordon means greater sales for me?

NAME.....

ADDRESS.....

CITY.....

DEPT. AA

Revive Your Sales With Roberts-Gordon !



DUCT HEAT LOSS

**and reduce duct cost with
SONOAIRDUCT.-XP**

PAT. APP. FOR

FIBRE DUCT

In addition to lower heat loss, long-length SONOAIRDUCT-XP fibre duct can save you considerable time and labor in installation of crawl, basement and attic space, gas or oil fired warm air heating systems. Widely used and approved. Sizes 2" to 36" I.D., up to 50' long — or can be sawed to desired lengths on the job. Immediately available.

HEAT LOSS COMPARISON

SONOAIRDUCT-XP is foil lined for low coefficient of air friction and outer-wrapped with 16-lb. asbestos.

Independent research laboratory tests prove that SONOAIRDUCT-XP has the equivalent insulation value of 26 gauge metal duct with HALF INCH fibreglass insulation!



WRITE TODAY... For Complete Information,
Sources of Supply and Prices!

SONOCO PRODUCTS COMPANY
Construction Products Division
LOS ANGELES, CAL.
HARTSVILLE, S.C. — MAIN PLANT
MONTCLAIR, N.J.
BRAINTREE, MASS.
KNOXVILLE, TENN.



we hear that . . .

(Continued)

in sizes of 400,000 to 500,000 Btu and with a combined capacity of 54,600,000 Btu per hr, are in operation, heating nearly 30 acres of warehouse space.

WICHITA UNIVERSITY'S Foundation for Industrial Research is conducting research experiments for the Coleman Co. in a six room house which is part of the foundation's test facilities. The first project was to measure the effectiveness of heating equipment for houses built over a concrete slab.

To determine the type of duct material best suited for heating slab floor houses and the depth at which the duct should be buried, engineers have set aside a special test section in the living room. According to Dr. Luther Lyon, director of the foundation, the tests are expected to produce new and helpful data which will aid in solving the problem of how best to heat slab floor houses.

PROMOTIONAL MATERIAL being offered to Radio Corp. of America air conditioner dealers includes display stands, banners, direct mail pieces, catalogs, booklets and other sales aids. Shipped in one package, the material is designed to last throughout the season. The packages are made up in two sizes — the "deluxe" kit for larger retail outlets and the standard for smaller dealerships.

INTERNATIONAL METAL HOSE Co. has moved into its new plant located at 4445 Humboldt St., Detroit. Now in production at the plant are three types of metal hose: Type B, light weight; BB, medium weight; and C, heavy weight. The hose is available in galvanized steel, brass, bronze, stainless steel and aluminum. It is designed for connection to tailpipe exhaust systems in repair garages, etc.

THE C. A. OLSEN MFG. Co. is conducting a series of jobber-dealer meetings to explain the features of "Moncrief" and "Luxaire" units. C. L. Grandstaff of the Olsen company is in charge. The next meeting will be held May 13-14, Binghamton Hardware Co., Binghamton, N. Y. Other meetings are scheduled to be held May 18-19, The Excelsior Heating & Supply Co., St. Paul; May 25, Inland Supply Co., Danville, Ill.; and May 27, Inland Supply Co., Mattoon, Ill.

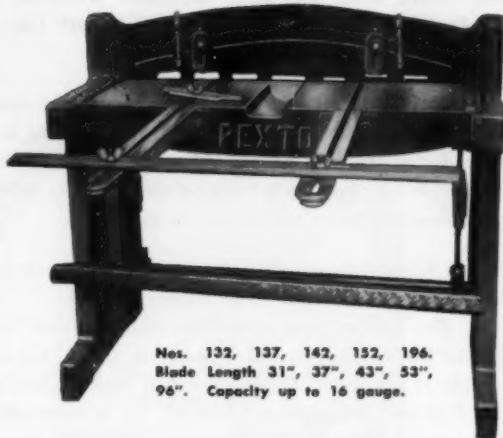
Subjects to be covered will deal with installing, adjusting and servicing techniques, also proven merchandising and sales procedures.

A NEW OFFICE BUILDING has been opened by the Minneapolis-Honeywell Regulator Co. at 885 Wethersfield Ave., Hartford, Conn. It will serve as the headquarters for the firm's heating sales and service in all of Connecticut (except Fairfield County), western Massachusetts and southern Vermont.

PEXTO... Best Buy

in

SQUARING SHEARS



Nos. 132, 137, 142, 152, 196.
Blade Length 31", 37", 43", 53",
96". Capacity up to 16 gauge.

Designed* for easy accurate cutting.

Available in sizes from 30" to 96".

Furnished complete with Front Gauge, Bevel Gauge, Graduated adjustable side Gauge and the famous PEXTO Rack and Pinion graduated precision Back Gauge.

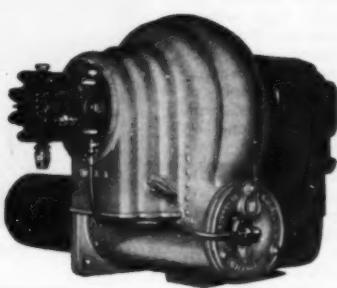
*Design Pat. DES 157,611.

THE PECK, STOW & WILCOX CO.

— since 1785 — Southington, Connecticut, U.S.A.

5 PX 52 A

Wisconsin BURNERS



- A complete line — with Wisconsin Burners you can offer your customers a choice of 5 sizes — from $\frac{3}{4}$ G.P.H. to 18 G.P.H.
- Every Wisconsin Burner is factory tested under actual firing conditions.
- Wisconsin Burners have a reputation for quality that has made them a leader in the field.
- Available with the famous, efficient Shell Combustion Head.

FOR INFORMATION ON AVAILABLE TERRITORIES, WRITE

WISCONSIN OIL BURNER CO.

1134 REGENT STREET • MADISON, WISCONSIN

appointments . . .

DUANE W. ROUSE as manager of sales engineering for the Toridheet Div., Cleveland Steel Products Corp. Mr. Rouse will continue to supervise the division's training program for dealers' service and installation personnel. Republic Plumbing & Heating Supply Co., 1970 Clybourn Ave., Chicago, has been named wholesale distributor for the division in northeastern Illinois.



Duane W. Rouse



Robert H. Friedel

ROBERT H. FRIEDEL as sales manager of the California and Arizona sales region for Airtemp Div., Chrysler Corp. He succeeds E. A. Ham, who will now handle special sales assignments in the Pacific northwest area. Mr. Friedel has been manager of the division's New York regional sales office, and last year was in charge of the

division's residential air conditioning sales and promotion program. E. O. Butler has been appointed regional manager of the Washington, D. C., sales region, succeeding Earl Palmer, who has joined the merchandising staff at Dayton. Since 1953 he has held the position of Airtemp executive engineer on government contracts for the Washington region. Central Queens Electric Supply Corp., Jamaica, N. Y., has been named New York distributor for residential cooling and heating equipment and commercial air conditioners for the division. Lehr Distributors, Inc., has been appointed wholesale distributor of room air conditioners in New York City and Long Island.

CHESTER F. SHORTAL as manager of the newly opened Kansas City district sales office of J. F. Pritchard & Co. of California, serving western Missouri and the state of Kansas. W. R. Roeyer has joined the company as manager of cooling tower and heat exchanger sales.

HAL P. KIBBEY as assistant vice president in charge of sales for United States Steel Supply Div., U. S. Steel Corp. Mr. Kibbey was formerly Chicago district manager of the company's warehousing division. Clyde B. Colwell, Jr., formerly district manager, St. Paul, has been named district manager at Chicago. He is succeeded in his former post by Earl L. Simanek, previously assistant manager at Chicago.

ONE doesn't fit ALL needs!



Get *Airsan Filters* ENGINEERED TO FIT THE JOB — RIGHT EVERY TIME

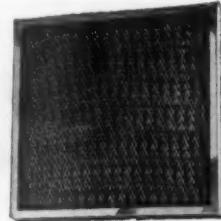
No filter does all jobs, meets every need. That's why Airsan Filters are engineered to the job to offer more effective dust collection. Airsan's expanded metal face plate acts as a lint arrester to provide easier cleaning and servicing. It distributes air easily over the entire filter area. Provide high filtering efficiency and dust holding capacity with less resistance. Features include all galvanized construction and welded lock corners. Write for data.

Send for Free Bulletins

AIR FILTERS

(Low Velocity)

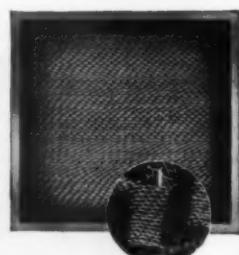
Viscous type, permanent and cleanable designed for industrial, commercial and domestic use. Available in 1" and 2" thickness.



VIRO-CRIMP

(High Velocity)

Has a specially designed high velocity Viro-Crimp filter core. Hemmed edges provide a safety feature. Operates efficiently at 300 to 500 fpm. Available in 2" and 4" thickness.



GREASE FILTERS

Permanent, cleanable type Airsan Grease Filters made especially for range canopies, galleys, kitchens. Available in 2" thickness.



Air Filter Corporation

108A NORTH WATER ST. • MILWAUKEE, WIS.
Canadian Representative
DOUGLAS ENGINEERING CO., LTD., MONTREAL

A Few Distributorships Available. Write for Details!

HEATWAVE

THE
GAS FIRED
FURNACE

A Type And Size To Meet Every Heating Requirement!

..that Boosts Your Profits

- FORCED AIR FURNACES
80,000 - 100,000 - 120,000
140,000 - 160,000 BTU Input.

- FLOOR FURNACES
27,500 - 35,000 - 50,000 -
65,000 - 75,000 BTU Input

- COUNTER-FLO FURNACES
80,000 - 100,000 -
120,000 BTU Input

- DUAL WALL
FLOOR FURNACES
50,000 BTU Input

- HORIZONTAL FURNACES
60,000 - 80,000 BTU Input

- VENTED RECESSED
WALL HEATERS
27,500 Single Wall — 45,000
Dual Wall BTU Input

ALL ARE

- ✓ Factory Assembled
- ✓ Economical Operation
- ✓ Fire Tested
- ✓ Smart Appearance
- ✓ Ready to Install
- ✓ Cast Iron Burners
- ✓ Competitively Priced
- ✓ 10-Year Factory Warranty



APPROVED BY THE
AMERICAN
• GAS •
ASSOCIATION



Distributed By Outstanding Wholesale Supply Houses • Write or Wire • Get The Facts!

SOUTHWEST
MANUFACTURING CO.
BOX 28 • Subsidiary of The F. E. Myers & Bro. Co. • AURORA, MO.

Randall

BEARINGS



offer simplified design . . . and precision boring to close tolerance

Four
LONG LIFE - LOW COST!

Simplicity of design and precision boring is the very reason for the low cost and long life of Randall Graphited Pillow Blocks. There are no moving parts or complicated mechanism to become defective or wear out. They are easy to install and require the minimum of maintenance since the large "deep well" reservoir holds sufficient oil for long periods of operation. Self-aligning and self-lubrication, Randall bearings are ideal for hard-to-lubricate applications. They are quiet in operation, can be mounted in horizontal, vertical, or inverted positions and are available in many different styles and sizes for light, normal or heavy duty.

Randall offers the most complete line of graphited sleeve bearing pillow blocks available anywhere. Ask your area distributor for more complete information or write direct to the factory.



RONZE BAR STOCK

BRONZE BUSHINGS

PIL'OW BLOCKS

SHEET LUBRICATOR

GRAPHITED BEARINGS

THRUST WASHERS

SAFETY COLLARS

BRONZE CASTING

RANDALL GRAPHITE BEARINGS, INC.

1000 S. Greenlawn Ave., Lima, Ohio

Randall

SAVE SPACE . . .

with **DUC-PAC** knocked-down Duct Fittings



DUC-PAC galvanized fittings are shipped knocked-down, packaged 12 to a carton . . . only require about 10% of the space needed to store old style fittings. They save space in your truck, too.

Because they're snugly packed in cartons, DUC-PAC galvanized fittings don't become dented or battered in storage or in the truck. Eliminating this waste keeps your costs down . . . your profit margin up.



Request free descriptive bulletin showing complete line.

They snap together in a matter of seconds. DUC-PAC's exclusive internal snap lock eliminates any "folding over" operation. No hammer necessary . . . appearance of finished job is improved.



DUC-PAC
DIVISION of SWETT BROS.
78 ISLAND POND RD. SPRINGFIELD • MASS.

appointments

(Continued)

WILLIAM B. COTT as sales manager of Westinghouse Electric Corp.'s new Air Conditioning Div. Mr. Cott joined the company in 1941, and has served in several capacities for the Sturtevant Div. — as northeastern district manager of the air conditioning department, as manager of syndicate sales, and as air conditioning sales manager. The Enterprise Heating and Air Conditioning Corp., Richmond, Va., has been named distributor for field assembled air conditioning equipment for the division, serving Richmond and its surrounding counties.

PAUL M. HOOVEN and William H. Grant as heads of two newly formed marketing regions for General Electric Co.'s Air Conditioning Div. Mr. Hooven will be located in Atlanta, headquarters of the southeastern region, while Mr. Grant will be in Cleveland, headquarters of the east central region. Seven field sales representatives have recently been appointed by the division. Cecil C. Coulter, Los Angeles, and H. J. Carr, Louisville, will specialize in packaged air conditioners. John H. Taylor, Detroit; Lee D. Nutter, Chicago; J. H. Shoemaker, San Francisco; S. H. Painter, Philadelphia; and Roy H. Stearns, Washington, D. C., will handle sales of home heating and cooling equipment. Heating and Air Conditioning Supply, Inc., Baltimore, has been named wholesale distributor of home heating and cooling products in the Baltimore area. Love

Convert Gravity Furnaces With A **CIRCULATAIRE** Bonnet Blower



CIRCULATAIRE ELIMINATES COLD ROOMS,
BALANCES HEAT DISTRIBUTION, SAVES FUEL

CIRCULATAIRE solves the problem of "hard to heat" rooms, boosts warm air quickly through all the heating pipes. CIRCULATAIRE is easily and quickly installed without removing the bonnet. Packaged unit includes motor and fan control. No new sheet metal work required, no changing of cold or warm air pipes, no baffles to be built. The CIRCULATAIRE is rigid, quiet and efficient in operation.

NOW READY — New CIRCULATAIRE Sales Aids add effectiveness to selling interview, conserves valuable selling time and increases sales.

A COMPLETELY PACKAGED UNIT
Nothing for the dealer to furnish except limited amount of labor



GET THE FACTS TODAY! WRITE...
CIRCULATAIRE DIVISION OF CORLETT-TURNER CO.
1007 S. KOSTNER AVE., CHICAGO 24

appointments

(Continued)

Sheet Metal Co., Indianapolis, is wholesale distributor for home heating and cooling products in the Indianapolis area.

Twenty-three wholesalers have been appointed by the company's Appliance Control Dept. to handle oil burner controls. Besides selling and distributing the controls, the distributors will act as official servicing and exchange points. The new distributors, by region, are:

Northeast: H. Molauer Co., 215 S. Elm St., Waterbury, Conn.; A. R. Webber Co., 424 Howard Ave., New Haven; Rochester Oil Burner Co., 116 Plymouth Ave., N., Rochester, N. Y.; Rochester Oil Burner Co., Buffalo; LeValley-McLeod, Inc., 126 Van Guilder Ave., Schenectady; R & O Supply Co., 105 Preble St., Portland, Maine; Gray Supply Co., 20 Franklin St., Springfield, Mass.; E. L. Kimball Co., 1256 Eastern Ave., Malden, Mass.; Cronin Supply Co., 60 Broadway, Cambridge, Mass.; West Side Plumbing Supply Co., Newark; and United Plumbing & Heating Co., Plainfield, N. J.

Atlantic: T. F. Campbell Co., 1013 Penn Ave., Pittsburgh; Refrigeration Supply Co., 1831 W. Broad St., Richmond; Greenberg Supply Co., 216 W. Fourth St., Wilmington; Fuel Savers, Inc., 15th & Herr Sts., Harrisburg; Lincoln Supply Co., 92-100 Lincoln Ave., Trenton; and R. E. Michel Co., Inc., 1017 Greenmount Ave., Baltimore.

Midwest: Columbus Automatic Sprayer Co., 348 N. High St., Columbus; Ohio Pump Service Co., 7905 Madison Ave., Cleveland; F. E. Winstel Co., 855 Poplar Ave., Cincinnati; Marine Electric Co., 110 S. First St., Louisville; Swanson-Nunn Electric Co., P. O. Box 126, Evansville, Ind.; Robert Barclay Co., 1234



I give my customers the BEST!

The **WIGWAM THERMCAP** eliminates

- DOWN DRAFT
- SLUGGISH DRAFT
- DAMAGING ACIDS
- CARBON
- CREOSOTE
- RAIN MOISTURE
- FUEL GAS
- CONDENSATION

The WIGWAM THERMCAP improves combustion — thus saves fuel. Looks good — is good. Keeps entire chimney dry. Has no moving parts to wear out. Saves costly repairs. Poor draft is dangerous; good draft means economy. The patented principle of WIGWAM THERMCAP creates a draft-pull at the chimney top. ADAPTABLE TO ALL CHIMNEYS.

WRITE FOR COMPLETE INFORMATION

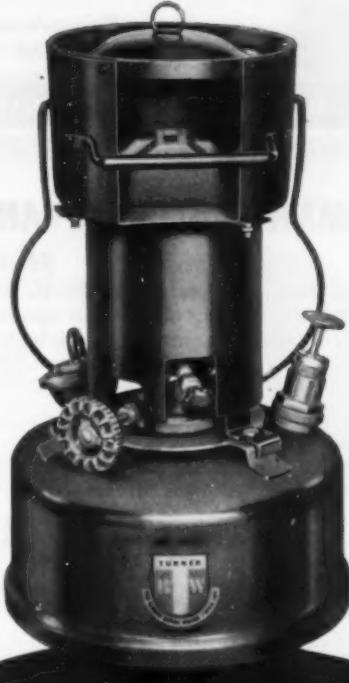
BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

Quality Since 1871

TURNER

NO. 475
LOW-PRESSURE

TINNER'S
FIRE POT



Smokeless . . . sparkless . . . sootless! Complete with Turner's exclusive "Carburetor Control" for more perfect combustion; positive flame control for exact heat desired. Construction assembly permits quick, easy accessibility and cleaning. Burner coil is extra-heavy seamless steel tubing; pump is heavy blow-proof brass. Fuel capacity — one gallon. Get details, too, on the Turner Plumber's Fire Pot; Turner's complete line of Blow Torches; the new Turner line of LP Fire Pots and Torches. See your jobber . . .

THE TURNER BRASS WORKS
SYCAMORE ILLINOIS
SINCE 1871

**PROFIT
NOW!**
WITH
**GRAND
RAPIDS
FURNACE
CLEANERS**



It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

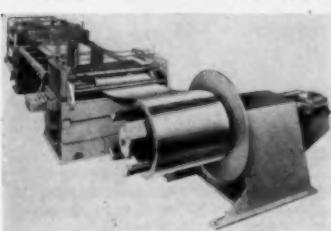
Act now! Write today for complete information and prices.

DOYLE VACUUM CLEANER CO.

227 Stevens St., S.W.

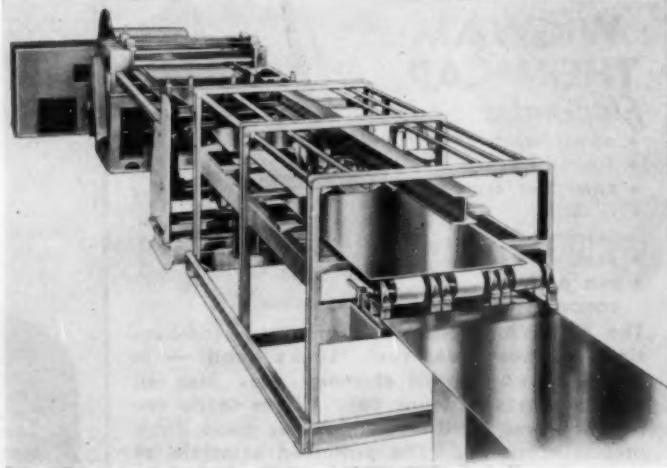
Grand Rapids 7, Michigan

Gauge capacity 12 gauge and lighter.
Widths up to 60" — other widths also available.
Cuts lengths to 20 feet or shorter.
Cutting tolerances of plus or minus 1/64".
Simplified length adjustment.
Variable speed range 50 to 150 feet per minute.
Designed and built to suit your needs.



When writing for descriptive data, give complete details of your requirements.

Decoiling end view



Dahlstrom MACHINE WORKS INC.

Roll forming machines, coil reels, roll straighteners, Flying cut-offs and decolling roll feed lines.

4225 WEST BELMONT AVENUE—CHICAGO 41, ILL.—TELEPHONE SPRING 7-3670

appointments

(Continued)

W. Fulton St., Chicago; Place Bros., Chicago; and Oil Heat Parts Co., 608 Lafayette Ave., Rockford, Ill.

RICHARD E. IRELAND as sales promotion supervisor for Janitrol Div., Surface Combustion Corp. In his new post, Mr. Ireland will aid in national advertising and promotional activity for the division's heating and cooling equipment. He has been with the company since 1937. Charles C. Owen has been named assistant sales manager for the western division, specializing in the sale of residential heating and cooling equipment. Prior to his recent appointment, Mr. Owen was sales promotion manager.



Richard E. Ireland



Charles C. Owen

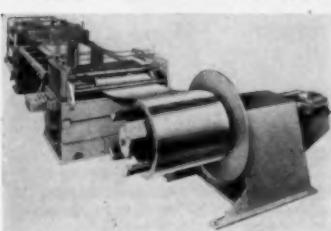
G. P. OLDHAM as general sales manager for Gustin-Bacon Mfg. Co., succeeding F. H. Ebbert, who has been assigned

AUTOMATIC DECOILING AND SHEARING BY *Dahlstrom*

Decoils • Flattens • Shears • Measures

Complete line consists of hydraulic expandable mandrel coil reel, roll straightener with all rolls power driven, hump table, high speed shear, conveyor type measuring and take off unit. All welded construction, anti-friction bearings, ground shafts and centralized control panel.

Gauge capacity 12 gauge and lighter.
Widths up to 60" — other widths also available.
Cuts lengths to 20 feet or shorter.
Cutting tolerances of plus or minus 1/64".
Simplified length adjustment.
Variable speed range 50 to 150 feet per minute.
Designed and built to suit your needs.



When writing for descriptive data, give complete details of your requirements.

Decoiling end view

Dahlstrom MACHINE WORKS INC.

Roll forming machines, coil reels, roll straighteners, Flying cut-offs and decolling roll feed lines.

4225 WEST BELMONT AVENUE—CHICAGO 41, ILL.—TELEPHONE SPRING 7-3670

appointments

(Continued)

other executive duties. In his new position Mr. Oldham will have responsibility for sales of the company's entire product line and will headquartered in the Kansas City executive offices.

GORDON V. BOND as branch manager of the Houston office of Carrier Corp. Mr. Bond, who has been with the company for 20 years, replaces Oscar H. Mehl, who has been transferred to the Dallas district office.



Gordon V. Bond



Dean C. Rupp

DEAN C. RUPP as vice president and general manager of the Mammoth Furnace Co.

T. E. CARSON as sales manager of the eastern division of The Fluid Heat Div., Anchor Post Products, Inc. Mr. Carson, formerly assistant sales manager of the eastern

MOREY FLOAT VALVES

Both valves operate either horizontally or vertically

WITH STAINLESS STEEL SEAT AND COMPRESSOR TRIGGER BRASS BODIES



LIST PRICE

\$1.60 each

Large Size or Small

Stainless steel orifice, brass wing nut and bolt. Neoprene gasket. High impact Neoprene Styrene float. STOCKED BY JOBBERS — 12 valves per carton. 6 cartons per case. Subject to standard jobbing discounts.

FLOW DATA

Large Valve: 240 gallons per hour at 60 p.s.i.

Small Valve: 190 gallons per hour at 60 p.s.i.

Will work in 1 inch of water!

Used as original equipment on evaporative coolers of outstanding reputation. Excellent on poultry and small stock troughs as well as cooling towers!

DAN MOREY

814 South Robertson, Los Angeles 35, Calif.



for BETTER PRODUCTION and MAINTENANCE at Lower Cost

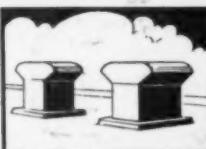
A proved time-saver in any sized shop. Libert's flexibility gives you a wider variety of work—clean shearing of flat or formed sheet metal... straight or irregular shapes... inside or outside cuts. Libert's simplicity means that even unskilled labor soon does accurate work, lots of it and fast! Write for Bulletin.

Made in sizes up to 60 in. throat, 10 gauge capacity

LIBERT MACHINE CO., GREEN BAY, WIS.

Libert **Hi-Speed SHEAR**

The Answer to Every Rooftop Ventilation Problem ...



Easily inspected and serviced. Just remove two bolts and tilt hood.



Allen High-Efficiency
ROOF FAN

Whatever roof ventilation installation problem you face, you can rely on Allen-engineered, High-Efficiency Roof Fans for the solution. These motor-driven fans are ruggedly designed to do a steady, heavy-duty job, removing air laden with heat, fumes, vapor, dust. Installation is rapid, easy. To install, merely cut opening in roof, flash housing to roofing material, and connect electrically. Designed for flat roof or level curb installations. Available in wide range of capacities (750 to 45,000 cfm), many sizes, and in Standard, Direct Drive, and Remote Drive types. Write for catalog on complete line of roof ventilators.

Representatives in principal cities are listed in our catalog in Sweet's Architectural File, Section 20b.



ALLEN
ENGINEERED
VENTILATION

PRODUCTION
PLANNING CO.
ROCHESTER, MICHIGAN

Roof Ventilators for Every Commercial and Industrial Need

In to stay when you use



Hardened

Screwnails

for fastening

SHEET METAL to WOOD
WOOD to WOOD

or other fastenings
where you need

NAIL DRIVING SPEED with
SCREW HOLDING POWER

Ask your P-K Distributor for samples and
the SCREWNAIL folder, or write:
Parker-Kalon Division, General
American Transportation Corporation,
200 Varick St., New York 14.

PARKER-KALON® FASTENERS

SHEET METAL and
PLATE WORK

Bending, Notching,
Forming, Blanking,
etc.



PRESS BRAKES

In the almost limitless variety of operations on sheet metal and steel plate, CHICAGO Press Brakes are well known for their consistent production performance. The proved all-steel construction and the flexibility of design in all models offer a versatility that is hard to beat. With 42 standard sizes, there is a CHICAGO steel press brake to suit your requirements.

Full Particulars and Recommendations
for Any Job on Request

4934

DREIS & KRUMP
MANUFACTURING COMPANY

7404 S. Loomis Blvd., Chicago 36, Ill.



appointments

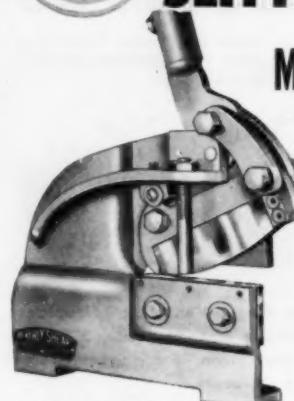
(Continued)

division, will headquartered in Baltimore. R. T. Dermarest, previously assistant sales manager of the western division, has been named sales manager of that division, with headquarters at Red Oak, Iowa. D. Grey Knowles has been appointed to a newly created position to handle various special coordination assignments. Mr. Knowles was formerly general sales manager of the Fluid Heat Div. His headquarters will be Baltimore.

DONALD R. WEIDENFELLER as manager of home office sales and Edward O. Abel as manager of the product service division of Milwaukee Gas Specialty Co. Roy R. Rafenstein was named district manager of the western division with headquarters in Long Beach, Calif., and Leonard W. Bowerman was appointed district manager of the eastern division with offices in Milwaukee.

P. F. KUTSCHER and E. L. Clifford as district managers for Armstrong Furnace Co. Mr. Kutscher will service the territory including northeastern Ohio, western Pennsylvania, western New York, northwestern Maryland and the state of West Virginia. Mr. Clifford's territory includes eastern Illinois, the central part of Indiana, part of Tennessee and the state of Kentucky. Both men will assist distributors in organizing dealer development programs and will offer assistance in installation and service problems.

NEW Beverly SLITTING SHEAR



SS-3 3/8" slitting cap;
5/8" trimming; 1/4" x 2" bar capacity

More Power...
Easier Cutting
Exclusive Design
Cleaner Cuts
Ruggedly Built
last a lifetime
Capacities to $\frac{3}{16}$ "

Get faster, easier slitting and trimming with a new design Beverly "SS" Series Slitting Shear. Rigid, strongly braced frame; compounded linkage and extra strength where needed. Many exclusive features. Write for FREE illustrated Bulletin.

See your Beverly Distributor today.
Ask for a demonstration—no obligation.

Beverly SHEAR MFG. CO.

3020 W. 111th STREET • CHICAGO 43, ILLINOIS

appointments

(Continued)

HAROLD M. ROBSON as central division sales manager for Farr Co. He will supervise representative sales from the company's office in Chicago.

MARECHAL N. DUNCAN as district office manager covering the Berkeley, Calif., territory for Penn Controls, Inc. Mr. Duncan replaces E. T. Layport, who resigned recently to devote full time to managing Pacific Control Products, Berkeley, which now handles all warehousing activities connected with the Penn district office.



Marechal N. Duncan



Eston Swain

ESTON SWAIN as application engineer for the C. A. Olsen Mfg. Co. Mr. Swain will assist Clarence L. Grandstaff, the company's chief application engineer, in research work as well as conducting educational meetings and in activities connected with the National Warm Air Heating and Air conditioning Association.

DIECKMANN
CONDUCTOR
ELBOWS and SHOES

An ANGLE for
every obstacle!

PLAIN ROUND
CORRUGATED ROUND
CORRUGATED SQUARE

Made in 28, 26,
and 24 gauge
steel hot dipped
galvanized after formation.
Sizes from 1" to 6". Angles
from 10 degrees to 90
degrees.
Also in Copper, Aluminum and
Stainless Steel.
Catalog available from
your jobber.

THE FERDINAND DIECKMANN CO.

ESTABLISHED 1871

CINCINNATI 22, OHIO

P.O. Station B

The simpler way to save
on fastenings to metal, plastics, plywood

P-K
TRADE MARK
REG. U.S. PAT. OFF.

Hardened Self-tapping Screws

Type
A
Slotted
or
Phillips

Industry's favorite for fastenings to light gage sheet metals, wood, asbestos, plywood and other hard compositions.

FASTER—eliminate tapping, soldering, riveting, or bolting.

STRONGER—Special heat treatment, originated by P-K, assures uniform hardness, to form clean threads, and toughness, to prevent breakage.

LOWER COST—saves time, simplifies assemblies, permits use of power drivers.

IF IT'S P-K . . . IT'S O.K. For guaranteed quality, get the Original. Samples free. Ask your P-K Distributor or write to the: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
The Original **SELF-TAPPING SCREWS**

BIG PROFITS FOR METAL DEALERS

get **CHEM-O-GLAS** facts

IT MAY PAY YOU WELL to get full details on PROFITS now possible through use of these shatterproof, translucent, chemical-glass sheets. Only one of its type L.A. Code Approved as "Flame resistant," Colorfast. Fadeproof. Maintenance-free. No paint needed—ever. Precision-molded under 400,000 lbs. to give greater strength of 26,000 psi, and absolute uniformity throughout. 5 colors in flat, or exclusive RIBBED shape so easy to install without costly special moldings. Small $\frac{1}{8}$ in. rib overlap saves up to 5¢ per sq. ft. Get facts!

"Tomorrow's Product"—available today. For complete facts, prices, free "Idea Folder" or name of nearest dealer, tear out coupon, now. Mail when convenient.

FLAT CHEM-O-GLAS ENDS BREAKAGE
Use as replacement for standard glass.

NEWEST USE: To replace glass in Jalousie or Lower Windows. "Lets light in; keeps light out." 5 colors. (Dealers: write for franchise details.)

CHEMOLD COMPANY, Dept. AA-5
2000 Colorado Ave.
Santa Monica, Calif.

RUSH ME: Chem-O-Glas "Idea Folder." Name of nearest dealer. Dealer franchise data.

Name _____
Company _____
Address _____
City _____ State _____

SEND NOW

WEBCO

the portable

SHEET METAL BENDING BRAKE



The WEBCO brake bends 20 gauge mild steel — an exceptionally strong — precision unit — compare specifications and construction. Make your own ducts and fittings — Portable.

Write for detailed information.

HALLMOR INC.

McMURRAY ROAD
BRIDGEVILLE, PA.



TIME SAVING
E-Z-ON
DAMPER REGULATORS
PERMIT
INSTANT ASSEMBLY

(Shown—Tail piece of #27 E-Z-ON)

It's the little things that
make the Big difference!

Advanced design of E-Z-ON damper regulators permits on-the-job assembly with only a hammer — no drilling — no rivets. This 16 gauge steel regulator is simply positioned on the damper by sliding it over the scribed center line. The E-Z-ON accurately stays in position until a hammer blow drives the sharp prongs through the damper (E-Z-ON prongs will pierce 22 gauge metal.)

E-Z-ONS PROVED MORE PROFITABLE

Job Histories prove that your apprentice or journeyman can save two-thirds of their damper makeup time with E-Z-ONS.

M. A. GERETT Corp.

724 W. Winnebago, Milwaukee, Wis.

Stocked in CANADA by
THERMIDAIRE CORP.
7-9 Cumberland Street, Toronto

STYLE & SIZE
Famous E-Z-ON standard
design No. 27
Solid end tail piece, threaded
head piece and wing nut —
 $\frac{3}{8}$ " bearing.

Superior E-Z-ON
"Snap-Tite" Design No. 29
Tail piece with retractable
snap end bearing, threaded
head piece and wing nut —
 $\frac{3}{8}$ " bearing.

appointments

(Continued)

CHARLES H. SCHMINKE as field sales manager for Ramset Fasteners, Inc., a division of Olin Industries, Inc. Formerly district sales manager of Lyons Metal Products, Mr. Schminke will have supervision of district sales manager personnel and the dealer-distributor organization.



Charles H. Schminke



Robert W. Ray

ROBERT W. RAY as general manager of the Ward Heater Co.'s Los Angeles office. Mr. Ray succeeds Russell Jarrett, retiring vice president and general manager. He was formerly with the Kresky Mfg. Co. as western regional manager, and before that was associated with the heating industry as a wholesaler.

JACK SAUNDERS as manager of a new sales district covering the state of Florida for Anaconda Wire & Cable Co.

**QUIET AUTOMATIC
OIL FURNACES**

SUSPENDED
Or Laydown Air Conditioning
FURNACES

SPACE SAVER...and a Labor Saver
It comes completely assembled including combustion chamber. For Garages, Service Stations, and Basementless Homes. Made in sizes from 75,000 BTU to 600,000 BTU.

Approved by Leading Oil Companies, Underwriters and Municipalities. WRITE TODAY FOR FULL DETAILS

A PRODUCT OF
QUIET AUTOMATIC BURNER CORP.

J. G. KAVENY, President
33-35 BLOOMFIELD AVE.
NEWARK 4, N. J.

An Exhaustive and Clear Explanation of Manual No. 7 That Shows You—



The author of "HOW, WHAT and WHY"—Professor S. Konzo of the University of Illinois—is one of the nation's foremost authorities on every phase of residential air conditioning and warm air heating. It was in Professor Konzo's office that the brunt of the work of assembling data and making the calculations for Manual No. 7 was carried out, and he was, therefore, ideally qualified to prepare this explanation of the Manual's background, make-up and correct use.

Table of Contents

- The New Manual Simplifies Engineering
- How to Figure Heat Losses
- Furnace Selection and Rating
- Blower Selection and Blower Ratings
- Successful Blower Operation
- Registers—Locations, Types, Sizes
- Procedure for Making Plant Layouts
- Equivalent Length of Fittings
- Equivalent Length of Registers
- Sizing the Branch Ducts
- How Tables 8 and 9 Were Established
- Sizing Return Air Ducts
- Trunk Duct and Bonnet Construction
- Sizing of Trunk Ducts
- How to Adjust and Balance a Warm Air Winter Air Conditioning System
- Reference List
- Cross Index

—HOW to Use It Correctly

—WHAT Experience Is Behind It

—WHY Every Dealer Should Use It

"The HOW, WHAT and WHY of the

Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems"

by S. KONZO

Special Research Professor—Engineering Experiment Station, University of Illinois

75 Pages — 8½" x 11" — \$1.00

Users of Manual No. 7 will find this "HOW, WHAT and WHY" booklet invaluable toward acquiring a clearer understanding of the Manual and properly applying it in the planning and installation of warm air winter air conditioning systems. Published originally as a series of articles in the magazine AMERICAN ARTISAN, this clear and comprehensive analysis has proved so helpful to dealers everywhere that now, in response to a wide demand, it has been reproduced in full in this new 75-page booklet "HOW, WHAT and WHY."

Professor Konzo begins "HOW, WHAT and WHY" by telling why a standard designing procedure for warm air winter air conditioning systems was needed by the industry. He reveals how the country's leading manufacturers of warm air heating equipment got together to work out such a method . . . how nearly 200 of the industry's key engineers held scores of meetings over a long period to coordinate data and experience in working out the dependable, simplified design and installation procedure which Manual No. 7 now offers.

Following this introduction, "HOW, WHAT and WHY" goes into a detailed explanation of the designing procedure itself, section by section. It shows the research and experience behind every rule, recommendation, and table the Manual contains. It tells why such factors as temperature drop in ducts, c.f.m. air delivery, air changes per hour, and various other factors which were once considered vital in the planning of forced air heating systems no longer need concern the designer. It provides much interesting supplementary information and comment which helps make each step in the suggested procedure easy to follow and assures the user of the Manual's complete soundness.

An especially useful feature of this explanatory booklet is a Cross Index which permits finding quickly full information about any item in the Manual which is not wholly clear. All in all, this "HOW, WHAT and WHY" booklet will not only assist owners of the Manual to use it to the fullest possible extent, but it will, in the bargain, add materially to their knowledge of every phase of winter air conditioning.

ORDER BLANK

AMERICAN ARTISAN
6 No. Michigan Ave., Chicago 2, Ill.

Attached is my remittance of \$1.00
for which please send me one copy
of "HOW, WHAT and WHY."

Individual _____

Firm _____

Street Address _____

City and State _____

NOW—THE WORLD'S FIRST!

Delta's NEW OIL-FIRED UNIT HEATER*

220,000 BTU/Hr OUTPUT • GUN-TYPE OIL BURNER
• 5,730 CFM AIR DELIVERY • THROWS HEAT 75 FEET
• SUSPENDS OVERHEAD • EXTREMELY ECONOMICAL OPERATION • RUGGED CONSTRUCTION • FACTORY PRE-WIRED & ASSEMBLED • ADJUSTABLE LOUVRES • SUMMER AIR CIRCULATION • EASILY MADE PORTABLE • 59 COMMERCIAL APPLICATIONS • LISTED BY UNDERWRITER'S LABORATORIES

Send for full details

*Patents Pending

SEE OUR OPERATING DISPLAY AT THE OHIO EXPOSITION - BOOTH 151-153 PHILADELPHIA MAY 16-20

DETA HEATING CORPORATION, TRENTON 8, NEW JERSEY
In Canada - Kresno-Stamm - Montreal 24, Canada

YOUR BEST INVESTMENT

LEVER WHITNEY PUNCHES

PORtABLE HAND OPERATED PUNCHES AND SHEARS.

A TOOL FOR EVERY PURPOSE. LEADERS SINCE 1907

Please Write Today for Literature

See Your Jobber

W.A. 

WHITNEY MFG. CO.
636 RACE ST. ROCKFORD, ILL.



NO. 1 PUNCH

Capacity $\frac{3}{16}$ " hole through $\frac{1}{4}$ " iron
Length 34". Wt. 23 lbs. Depth of throat $1\frac{1}{8}$ "
Punches and dies $\frac{1}{8}$ " to $9/16$ " by $1/64$ "



NO. 2 PUNCH

Capacity $5/16$ " hole through $\frac{1}{4}$ " iron
Length 28". Wt. 14 lbs. Depth of throat $1\frac{11}{16}$ "
Punches and dies $3/32$ " to $1/2$ " by $1/64$ "

Can be supplied as our Channel punch for angle and Channel Iron.

appointments

(Continued)

The new office will be located in Tampa, and Robert W. Carmichael has been named to work with Mr. Saunders from this office. Frank D. Dickey has been appointed manager of the San Francisco district, succeeding Lee Hayward, who has resigned. Mr. Dickey will be assisted by Dick Riley, who has been transferred from the Cincinnati district. Other changes include the assignment of Howard Davies as salesman for the district office in Pittsburgh and the appointment of Thomas F. Jackson to the Chicago district office.

F. J. WILTSIE as direct factory representative covering New York state for General Automatic Products Corp. Mr. Wiltsie will maintain offices at Ravenna, N. Y. Robert M. Hodgdon has been named factory representative to cover Massachusetts, Rhode Island, Connecticut and the southern part of New Hampshire. His offices are at 30 Prospect St., Taunton, Mass. The state of North Carolina and the northern section of South Carolina will be handled by C. Grayson Williford, whose headquarters will be at 1008 Sylvan Blvd., Hendersonville, N. C.

EUGENE C. WHITCOMB as sales representative for Metalbestos Div., William Wallace Co., handling the sale of gas vent pipe in the Central Atlantic states. His headquarters will be in the company's New York office.

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Less than 5 seconds on short and lighter pieces . . .

Slightly longer on bulkier pieces

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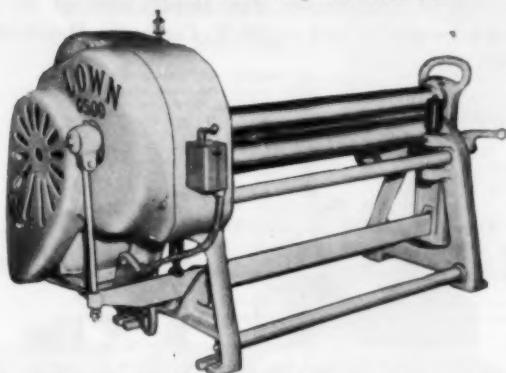
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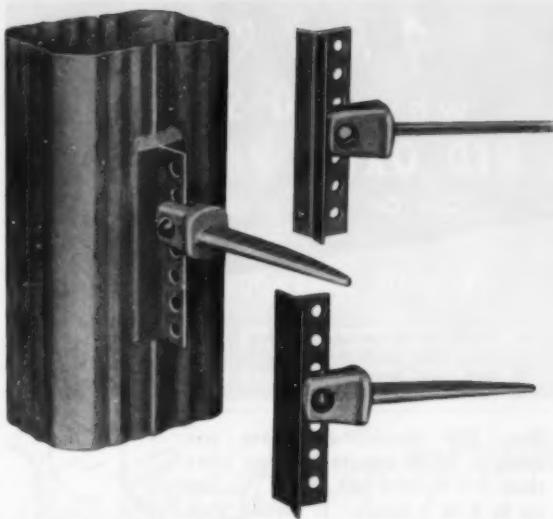
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appointments

(Continued)

MAL GALVIN as manager of York-Heat of Connecticut, a division of York-Shipley, Inc. Headquarters of the division are now located at 189 W. Center St., Manchester, Conn.



Mal Galvin



William B. Spargur

WILLIAM B. SPARGUR as sales engineer for the Delavan Mfg. Co. Mr. Spargur was previously with the Electrical Engineering Equipment Co. In his new capacity he will handle the sales of oil burner nozzles and compressor parts for commercial refrigeration units.

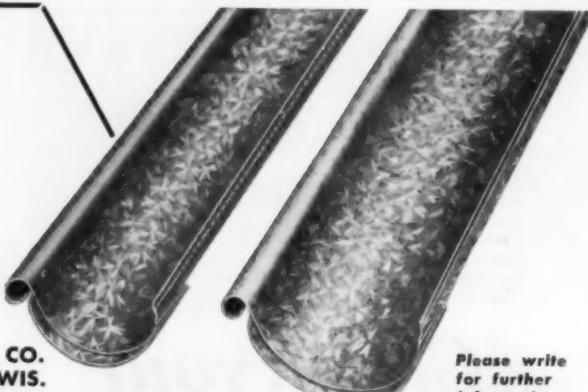
THADDEUS J. KASPER as sales representative covering northern New Jersey for Perfection Stove Co. Mr. Kasper has been with the company since 1940.

WALTER J. FALLON, Joseph H. Higgins, James Morong and L. L. Frost as sales engineers for the Air Condition-

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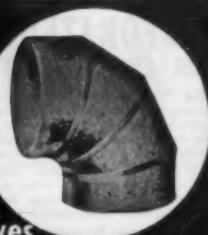
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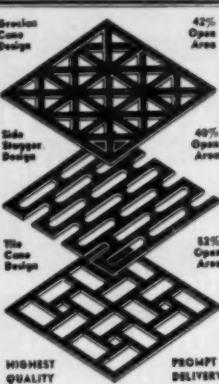
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ing Engineering Co. They will call on dealers in the New England states.

E. G. HILLMAN as regional sales director for Famous Furnace Co. Mr. Hillman was formerly with the Pittsburgh office of Wheeling Corrugating Co.

ROBERT V. McCALLISTER as sales manager of the General Products Div., Glass Fibers Inc. Mr. McCallister has been manager of the New York sales branch. In his new capacity he will supervise sales activities of the company's general products including thermal and acoustical insulation and high temperature insulation.

H. ALBERT MITCHELL as field sales engineer for the newly created air conditioning division of Ashburn Supply Co.

E. F. DILL as manager of the Seattle sales office of Minneapolis-Honeywell Regulator Co. He formerly was branch commercial sales manager in the San Francisco office. At Seattle, he succeeds W. G. Warrington who has resigned to become vice president and general manager of the Roscoe Mfg. Co. R. J. Conner has been named to succeed Mr. Dill as branch commercial sales manager at San Francisco.



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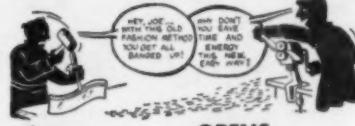
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Galvanized Steel Sheets...

good bye to your money

or

good buy for your money



Let Wolff Metal Service help you make the right decision

When you buy galvanized sheets for a prime job, are you sure you are receiving primes? A great deal of confusing information is being passed around today on galvanized sheets . . . and if ever you are in doubt, just remember the No. 1 lesson you learned when you started in business — "You always get what you pay for"

Low price is either a good buy or a poor one depending on the value you receive for your money. Inasmuch as not one mill in the country is selling galvanized sheets at a shaved price — what hocus-pocus is going on to convert sub-standard steel into the real McCoy! And Wolff knows the market. As the largest warehouse buyer of galvanized in the Midwest, all district mills solicit Wolff business.

If "seconds" will do for you, you can get them from Wolff — as "seconds." If you want prime sheets, Wolff stocks are the most complete in this district — and they are prime. But whatever you buy, it's guaranteed to be the best buy for your money. And that's the word of a company that has grown steadily for 37 years by serving the best interests of the sheet metal contractor. If that policy appeals to you, you'll profit most by working with Wolff as thousands of successful shops already do.

Write or call, the next time you need galvanized steel sheets or Carbon Steels, Stainless Steels, Aluminum, Brass, Copper, Tin Mill Products, Expanded Metal, Metal Decorating

BENJAMIN WOLFF AND COMPANY

General Office and Warehouse — 1945 N. Cornell Ave., Melrose Park, Ill.
Wisconsin Office — 176 W. Wisconsin Ave., Milwaukee 3, Wis.



Chicago Phone
Estebrook 9-2500

Suburban Phone
Fillmore 4-7200

Milwaukee Phone
Broadway 6-1734

**Wolff
Metal
Service**

ALUMINUM
BRASS
COPPER
STEEL

cool profit

WITH CARRIER
AIR CONDITIONING

If you sell heating, you probably want to get into the cooling business in self-defense. But there's a better reason: Carrier air conditioning is profitable!

Listen to this Carrier dealer:

"When we get a contract to do a house, we put in just about the same amount of labor whether the job is just heating, or heating and cooling. But we get a lot more income out of complete air conditioning. As a result, I can increase my profits, without adding a single man, just by converting my heating prospects to air conditioning!"

It's that easy! And, when you tie up with Carrier, getting a good start in the air conditioning business is a cinch!

Carrier and Carrier distributors know the air conditioning business and they can pass that knowledge on to you! There will be introductory training, frequent refreshers, consistent technical back-up, and a steady flow of easy-to-understand installation manuals.

You'll also get advertising, promotional and display material to identify you as the Carrier dealer in your community. And that's a mighty nice thing to be! So mail the coupon soon!

I'd like some of that nice cool money. Who's my Carrier distributor?

THIS CARRIER
WEATHERMAKER



- heats with gas or oil
- cools with electric refrigeration
- takes only 10 sq. ft. of floor space
- fits in basement, closet, utility room
- needs no water

Carrier

air conditioning • refrigeration • industrial heating

CARRIER CORPORATION, 200 S. Geddes St., Syracuse, New York

STATE